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SAN FRANCISCO, JANUARY, 1897.

No. I.

ON MT. LEFROY, AUGUST 3, 1896.

BY CHARLES SPROULL THOMPSON.

Shortly after dawn, on Monday, August 3, 1896, four men gathered, in eager preparation, upon the platform which surrounds the Canadian Pacific chalet at Lake Louise.* A year before—to the very day, as it chanced,—Prof. Charles E. Fay, Mr. Philip S. Abbot, and the writer had endeavored to reach the as yet untrodden summit of Mt. Lefroy by a couloir which offers the only feasible passage through the cliffs of its northern face. The failure of that endeavor, a failure fraught with possibilities of ultimate success, increased our desire. All winter we had planned and plotted to overcome the difficulties of that mountain. Now, with a less rigid itinerary, with an added comrade,† we made ready for a second, and, as we believed, conclusive, struggle.

The surpassing beauty of the view westward from the platform that morning remains with me. In the foreground, completely filling the lower end of the valley, lay the dark-green waters of Lake Louise, as yet unruffled by the inevitable noonday wind. Four miles away, seemingly but two, beyond rock avalanche, terminal moraine, and

* The valley of Lake Louise lies about two and a half miles southwest from Laggan, a station on the Canadian Pacific Railway, seven miles east of Hector Pass, where the railway crosses from the Atlantic to the Pacific Slope.

† Prof. George T. Little, of Bowdoin College, Brunswick, Maine.

low-lying glacier, the summit range of the Continental Divide swept across the valley, a wall of gray precipice and hanging ice, the snowy battlements of a Canadian Asgard. Before its face, now rising, now falling, now dissolving, strangely stratified clouds floated in curious undulations. The abruptly rising sides of the valley fittingly framed the picture, the quiet waters of the lake doubled and intensified it.

Our route lay up this valley. To the left of the mountain wall, known to us as Mt. Green,* thrusting its imposing mass between the Green and the Mitre Glaciers, stood the goal of our anticipated effort, Mt. Lefroy. Up its eastern face, fronting us,—a snow-corniced precipice, falling four thousand feet to the Mitre Glacier,—it is safe to say that man will never go. The northern face, on the other hand, offered, as we knew, one possible line of ascent. From where we stood, its profile showed a varying slope, inclined at an angle of about thirty-five degrees, steepest in its middle part, ending below in a line of cliffs eight hundred feet high, which overlook the Green Glacier. In this line of cliffs a re-entrant angle held an unseen but well-remembered tongue of snow, rising with ever-increasing gradient to within a comparatively short distance of their summit. Above, two rock chimneys offered a passage, possible but at the time of our former visit quite impracticable, to this upper slope. But the rising sun warned us to hasten. Already its rays touched and glorified the snowy apex of Mt. Green,—a Pythian oracle, read by us as a prophecy of success.

It was a quarter past six as our boat pushed out from the floating wharf; it was a quarter of seven as its keel grounded in the sand of the delta at the head of the lake.

* So named by Mr. S. E. S. Allen, after the Rev. William S. Green, A. C., one of the first mountaineers in this region. Notman's photographer called it Mt. Victoria.

Thence our way held through a last line of forest trees, over rock-strewn and stream-swept flat, over lingering patches of winter snow, up, slowly, steadily up, across lateral moraine and débris-covered glacier, to the uncertainly defined line where snow began to hide the hitherto open crevasses. Here, 7450 feet above sea-level, 1500 feet above the chalet, we paused to put on the rope. We were at the open end of a gigantic amphitheater, walled from left to right by the perpendicular cliffs of Mt. Lefroy and Mt. Green and the hardly less precipitous slopes of Mts. Nichols and Despine. Its floor was the Green Glacier upon which we stood. Not far from us, open to plain view, rose the couloir on Mt. Lefroy of which I have already written. In addition to the difficulties previously encountered, a transverse schrund now completely divided the tongue of snow into approximately equal parts. To pass the schrund, by a difficult traverse across the face of a prominent buttress on the right, was doubtless possible, but to me the thought of such an ascent was far from pleasing. Uninviting as it was, we might ultimately be forced to go that way. On this day, however, our hopes centered in an ascent through the Death Trap.

Quite unseen from the chalet, quite unseen even from where we stood, a curious side passage, hitherto unexplored, led from the amphitheater to the summit of the divide. Hidden in the angle between Lefroy and Green, its major axis parallel with and between the major axes of those mountains, the passage splits the summit range as a wedge splits an oaken log — with the grain. In the early spring the entrance is swept by avalanches from both mountains; in July and August the only danger lies in occasional ice-falls from the hanging glaciers on Mt. Green, a danger easily avoided by keeping under the bare walls of Mt. Lefroy. Doubly impressed by the thunder of these ice-falls, and by the ferocity of the cliffs at the narrow

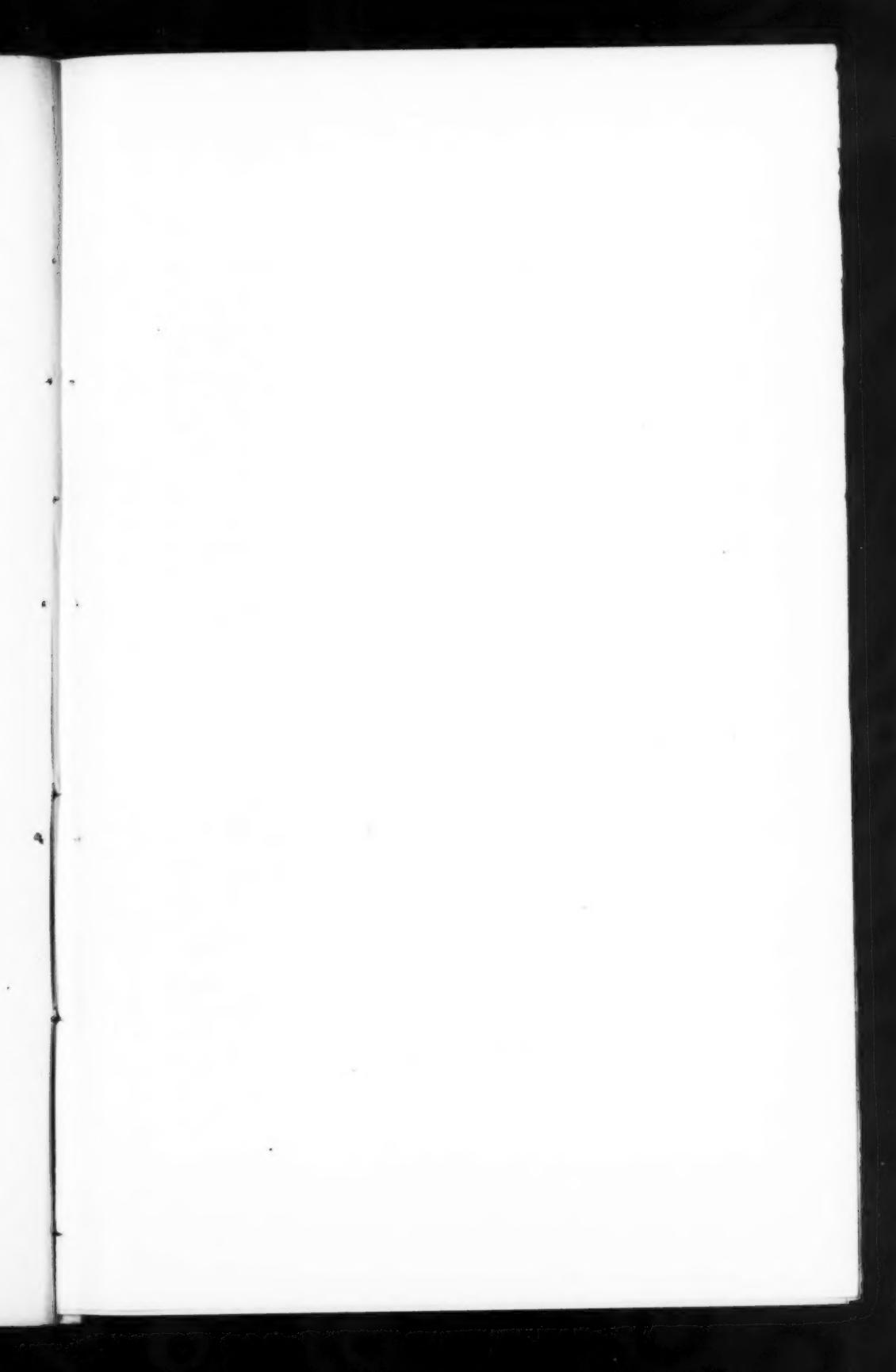
entrance, an earlier traveler* has given to the lower portion of this passage the name by which we knew it, the "Death Trap." Thither we turned our steps.

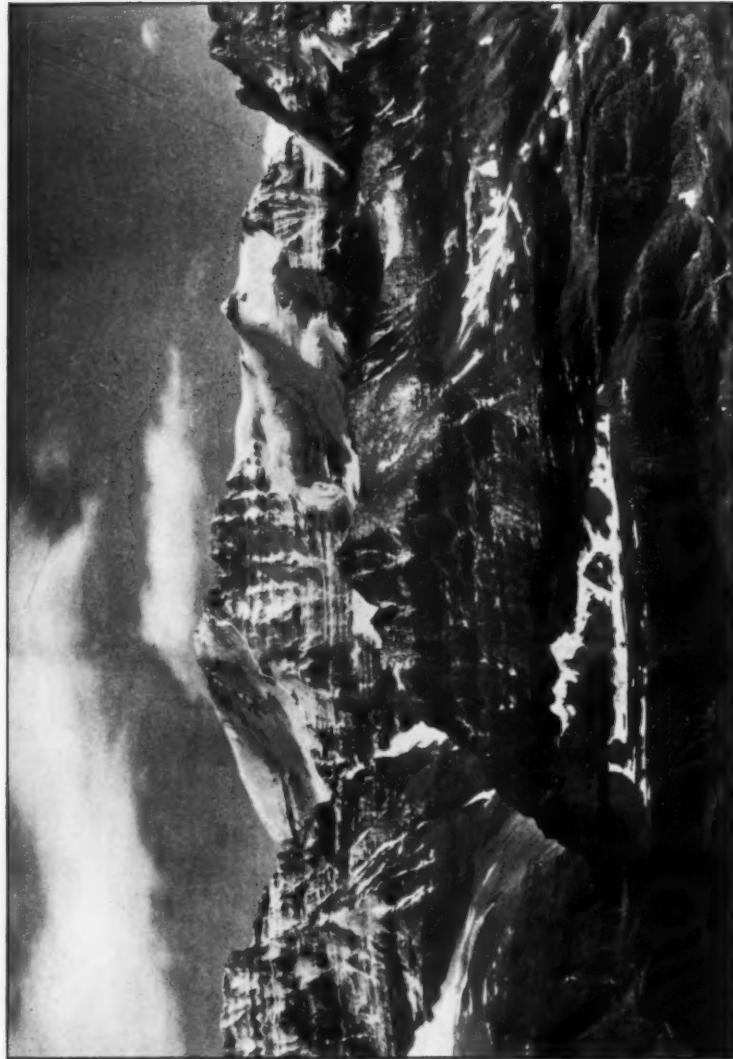
A magnificent sight opened southward as we swung rapidly around the corner of the farther buttress of Mt. Lefroy. It came suddenly, almost in the twinkling of an eye—a glacier-filled gorge a mile and a half long, at its widest perhaps three hundred yards, rising in rounded terraces to the summit of the pass, over two thousand feet above. The lower slope, deeply cut between Lefroy and Green, lay in heavy shadow; the higher nev  glistened a dazzling white under the undimmed rays of an Alpine Sun. Far above, a curved line separated sky from snow, azure quartered upon argent. For the next three hours—from ten minutes of nine until ten minutes of twelve—four tiny specks moved up this glittering causeway. The ascent was neither difficult nor toilsome. Once, below the debris of an avalanche which had swept far down the narrowing slope, we paused to photograph and lunch. As we ate, a block of ice broke from the overhanging glacier on a cliff near us and fell, pounding into dusty fragments, almost at our feet. Two cameras caught its first down-rushing. Thus fifteen minutes passed; then upward through the avalanche débris and over or around crevasses, one, the last, crossed "on all fours" by means of a snow bridge. Ahead the sharp white line upon the blue sky grew sharper, nearer, then dropped away altogether. The snow broke upon an edge of scree. We looked across the summit of the continental watershed.†

Wonderful, tremendous; not beautiful, save as the sublime always contains elements of beauty; almost overpowering. Three times that day this scene was burned upon

* Mr. S. E. S. Allen, of Philadelphia, Pa., who, in 1804, reached the summit of this pass from the other (or British Columbia) side of the watershed. Our work that day, joined to his, proved it a true pass.

† The barometric altitude was 9850 feet.





MT. LEFFROY FROM ABOVE CATARACT PASS.
From photographs by the Canadian Topographical Survey.

my visual memory,—three times,—never to be forgotten. Here Mt. Green ended. Below, a great pit, funnel-shaped, holding in its depths a sea-green lake, Oesa, glacier-fed, glacier-hemmed; beyond, a flamelike peak—Mt. Biddle,—and the crescent line of the Ottertails, ended at either horn by the fierce Goodsir and the snowy Vaux; in the far distance, the Selkirks, soft, unreal, cloud-tipped. This at a glance. Then, thrusting themselves upon us by their nearness, the truncated summit of Ringrose, the ragged shoulder of Hungabee, and the white curves of Glacier Dome. At hand, overshadowing us, Lefroy. Never before was such a combination of the far and the near. It was surely true:—“They have not seen the snowy hills of God who have yet to look upon the Rocky Mountains, absolute, stupendous, sublimely grave.” *

In this first view, the conquest of Mt. Lefroy seemed assured. That portion of its western slope which lay directly above us was covered by three ice-streams, or, rather, by one ice-stream, broken, more or less continuously, into three parts. Above this ice-covered slope, crowning the mountain, was an almost level palisade of yellowish limestone cliffs, weathered into rude turrets and bastions. The ice reached to the foot of these cliffs, curved to the north, and, sweeping by their right flank, separated it from an inconspicuous mound of gray rock, the probable summit of the mountain. Hidden beneath a thin layer of fresh snow, the surface of this ice inclined at a very considerable, but not prohibitive, angle. Should that surface prove soft and rotten, as from the condition of the ice-slope in the pass there was every reason to hope, we should be on the summit within two hours. Satisfied with the prospect, we turned up a boulder slide, and near its head,† immediately above the pass, we ate a second lunch. I noted

* Gilbert Parker: “Pierre and His People” (Stone & Kimball), p. 141.

† Barometric altitude, 10,100 feet.

curiously that Abbot and Fay were in British Columbia, while Little and I remained in the District of Alberta, Northwest Territory. It was half-past twelve.

The first blow of the ax upon the ice, heavy, dull, resist-ant, altered our plans, dashed our hopes of easy success, and, little suspected, turned the fortune of the day. No longer an easy, rapid ascent along footholds carelessly taken, kicked in the snow; instead, a long, arduous scramble over intermittent ledges, changing to ice, and toilsome step-cutting only as a last resort. Abbot, as ever, went first; passed to the right over a whitened scree slope, and up a low escarpment* on the southern edge of the largest and most northerly of the three ice-streams, the one, in fact, which led directly to the summit. We had cause to remem-ber that escarpment later in the day. Beyond, moving one at a time, carefully, cautiously, with no thought of things temporal save the glasslike surface beneath our feet, with no knowledge save that the slope opened into the Oesa pit, we cut a way up and over the second ice-stream, dug tooth-and-nail up the treacherous friable limestone of a second ledge, passed across the third ice-stream, climbed another ledge more degraded, more abominable than its predecessor, then moved out upon the ice-dome beneath the crowning cliffs.

Nothing can surpass the supreme exultation of such a moment, the clear, exhilarating atmosphere, the great silence, the virgin peak almost won, the icy dome on which we stood falling into air. The eye, too, swept a broadening horizon. Over the tremendous southern precipice of Green came the snowy top of Huber, prism-pointed; to the northwest, beyond Nichols, lay the un-mapped, untraversed ice-field of the Waputtehk Mountains, holding in their midst the white cone of Balfour, promising two days hence an easy victory; to the north, rose the

* Barometric altitude, 10,300 feet.

massive bulk of Hector, sulking, as usual, behind a cloud. All the visible mountains were even now beneath us — all save five. Perchance the coming conquest, perchance the quickened heartbeat, enhanced the beauty of this second view. Its memory gives added glory to the first.

Across the pleasure fell a deepening shadow. The day was passing; already it was half-past five. At such an hour our position on the slope became indeed critical. Pushed more and more by the general configuration of the ledges toward that end of the cliffs farthest from the summit, we were now driven either to scale their face or to cut a traverse below them to the main ice-stream; to turn their left flank, a line of perpendicular rock conveniently near us, was manifestly impossible. Apparently, chance favored us. As Abbot touched the base of the cliffs, his face brightened, and with a ring of certainty in his voice, he exclaimed: "There is a good crack here." A minute later we had gathered together upon a tiny bed of scree, perhaps eight feet long, and at greatest six feet wide, the floor of a re-entrant angle.* Jutting into this bed of scree, a narrow knee of rock, some four feet high, offered a first upward step. Above the knee, one to the right, the other to the left of a broad stone face that filled the inner corner of the angle, were two crevices through which a man might press. A plan was quickly formed. In rapid succession Abbot bade us put off the rope. Thus released, dragging both our two ropes tied together behind him, he passed up on the knee, and immediately thence to the right-hand crevice. Little followed. Both, entering the crevice, disappeared behind the rock-face. Fay and I remained upon the scree awaiting the time when, with the aid

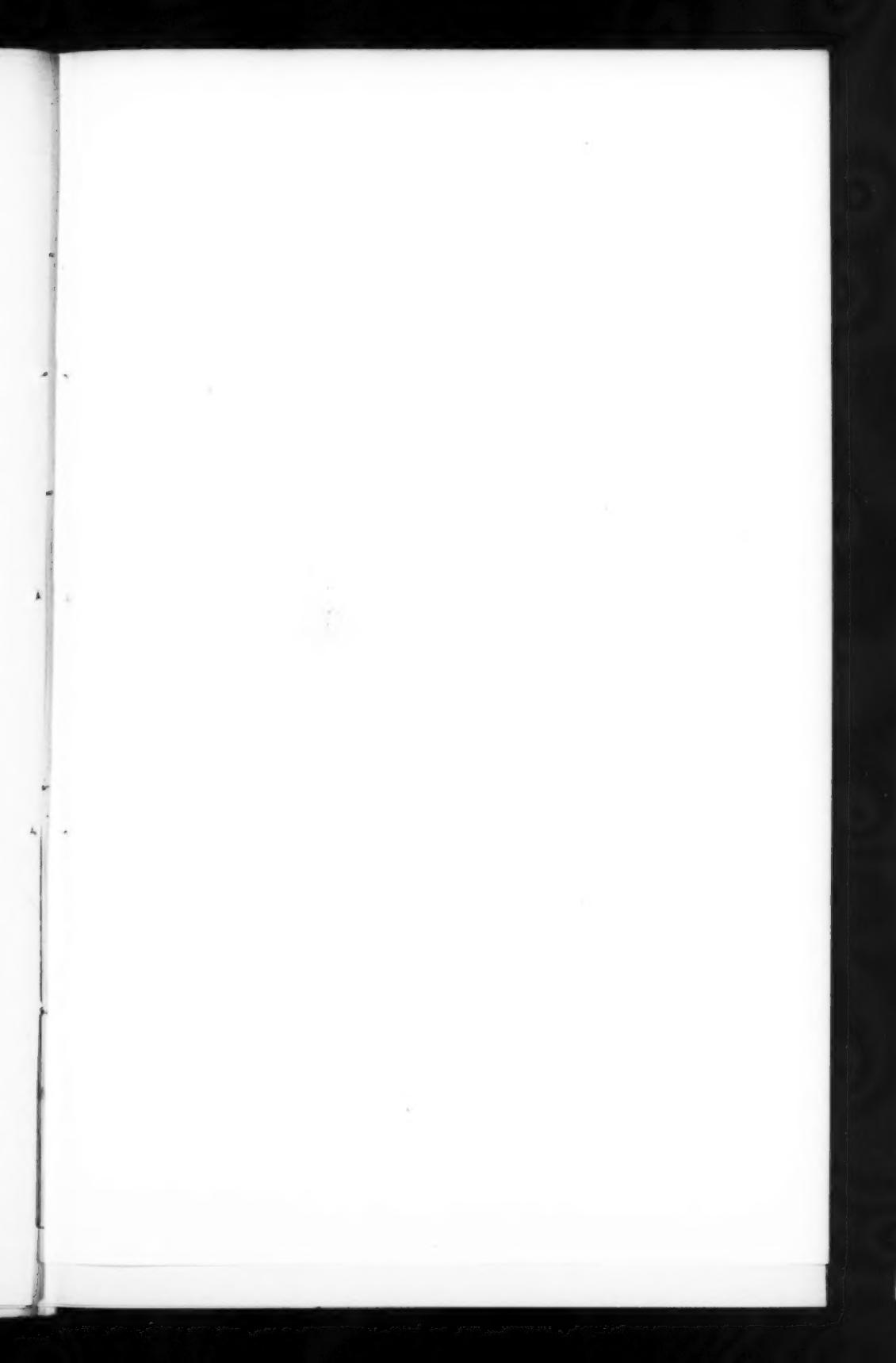
* Barometric altitude, 11,300 feet. Capt. Deville, of the Canadian Topographical Survey, informs us that the triangulated height of Mt. Lefroy, subject to correction, is 11,260 feet. We were, I should judge, 200 feet below and 300 feet south of the summit at the time of the accident. Abbot was, of course, considerably higher.

of the rope firmly fastened, we might easily and safely join our comrades on the top of the cliffs. To the men above two ways opened; one, along a narrow ledge about a foot and a half wide, skirting the face of the cliff, summitwards; the other, at right angles to it, up a shallow groove, hopper-shaped, leading directly to the arête. Abbot chose the groove, and, entering it, vanished from Little's view, The rope, dragging behind, followed foot by foot.

Success or failure hung in the balance of the flying moments. Idly leaning against the protruding knee, I watched the mists whirl and eddy around the inaccessible pinnacle of Huber. Fay stood about three paces from me, under the safe protection of an imposing buttress. By leaning a little outward, we both could distinguish the separate bowlders of the summit mound. Five, ten, fifteen minutes passed. In the impressive silence came the dull thud of a falling body, faint and rattling at first, heavy and crashing as it came bounding nearer. Crying to Fay that a great stone was coming, I made two steps toward him, turned, saw Abbot pitch through the left-hand crevice, strike upon the top of the knee, turn completely over, and, clearing the scree, plunge headlong down the ice-slope. Some seconds thereafter we saw him lying at the edge of the escarpment, the ropes wound about his body.*

Three hours later we stood beside him. Looking up, I saw again in the gathering twilight those most wonderful peaks of the known Canadian Rockies; above them were the slowly drifting clouds of a coming storm and the depths of an infinite sky. A cool north wind drew gently through the pass—Abbot Pass, in remembrance of him who lay there motionless upon the snow!

* We shall never know how Mr. Abbot chanced to fall. From the nature of the death-wound, a V-shaped fracture of the left parietal and the occipital bones, it is probable that his hand-hold gave way, and that he fell backward, receiving the fatal injury in the initial fall.





PHILIP STANLEY ABBOT.
1890.

PHILIP STANLEY ABBOT.

By ROBERT HERRICH.

The man of whom the world was deprived by the fatal accident on Mt. Lefroy, August 3, 1896, was not merely an enthusiastic and skilled mountain-climber to whom a mischance came in a hazardous sport. Although not yet in his twenty-ninth year — scarcely done with the preparatory exercises of manhood, — his powers of mind and spirit had impressed themselves singularly upon a large number of his fellows in every position where he touched them, and had marked him for a strong and distinguished career.

Philip Stanley Abbot was born in Brookline, Mass., September 1, 1867. His parents were both of old New England families from New Hampshire and Maine; among his ancestors were Captain Nathan Hale and Increase Mather. His father's youngest brother, from whom the name Stanley came, left Harvard to take part in the Civil War, and fell at Gettysburg before his classmates had finished their junior year; another uncle, General Henry L. Abbot, Corps of Engineers, U. S. A., filled high positions, both on the staff and in command of volunteer troops, throughout the war, and is to-day one of our most eminent scientific men. This ancestry left its heritage of intellectual force, moral and physical courage, and uprightness with young Abbot.

In 1876, his father, Mr. Edwin Hale Abbot (Harvard, 1855) removed from Cambridge, Mass. to Milwaukee, Wis. There, in the next ten years, Philip completed his studies for admission to Harvard College, entering in 1885 with the class of '89. His preparation for college, which

was directed by his father (at one time instructor at Harvard in Greek and Latin), was singularly thorough. His grasp of Greek was especially remarkable, and his familiarity with Greek authors, even in this early period, made of a necessary task a literary pleasure. In his entrance examinations he took honors in thirteen out of eighteen subjects. Moreover, he had already made himself a fair entomologist, and his collection of butterflies and insects was extensive. Thus, while still a boy, he started the seeds of rational, scientific outdoor interests.

In the summer of 1884 he visited England with his father, and spent some weeks in wandering among the hills of the Lake District, where, in climbing Helvellyn and Skiddaw and Great Gable, he had his first taste of the joys of his favorite recreation. After leading his class during the freshman year — standing higher in percentage on the rank list, according to the system then in use at Harvard, than any other student in the university, — he was compelled to withdraw from college on account of illness. Leaving America in February, 1887, he traveled with the writer successively through Cuba, Mexico, California, and the Pacific Slope to Alaska, returning over the Northern Pacific to the Yellowstone Park and the East. While in Mexico his eyes turned eagerly to the lofty volcanic mountains, and in April, in company with Dr. Parsons of the City of Mexico, and Mr. Barron of St. Louis, he made the fatiguing ascent of Mt. Popocatapetl,* going to the extreme summit of the crater. During his stay in California he made two visits to the Yosemite Valley, from which he explored the neighboring Sierra, finally ascending Mt. Dana, where he deposited his name in the bottle beside that of Dana and a few others. In Alaska the magnificent ice-fields aroused his enthusiasm, and at the Muir and Davidson

* Speaking afterward of his three days' expedition to the summit of Mt. Popocatapetl, Abbot described it as a "grind," requiring endurance in the long tramp over the snow-fields, but without any demand upon skill.

Glaciers he made such short expeditions as the opportunities afforded. On his way East he spent some days in walking and riding through the Yellowstone Park.

Once back in Cambridge, in the autumn of 1887, with restored health and perfect vigor, he devoted himself to all legitimate college interests. Having led one class ('89) in his freshman year, he now entered a second body of four hundred young men ('90), and led his new class in scholarship, taking second-year highest honors in classics. Throughout the remainder of his college course, as well as later at the Law School, where the competition is more severe, he stood among the first two or three each year, it being impossible by the new marking system to determine the relative grade any more closely. His tastes in scholarship were remarkably broad, as well as keen. Aside from the classics, he took high rank in the mathematics, pursued some courses in geology with special interest, and during the last two undergraduate years specialized in history and political economy, to which studies he had plans at one time of devoting his life. More remarkable, when we consider the diversity of his interests, was his proficiency in modern languages. German and French he could use with ease when he entered college, and later, while climbing in the Alps, he spoke German entirely with his guides. He taught himself Italian in order to take Professor Norton's course in Dante. While in Cuba and Mexico on a pleasure tour, he mastered enough Spanish not only to read the language with ease, but also to speak it fluently and correctly. In later years, when he was traveling in Denmark and Norway, he read Ibsen in the original. This range of linguistic power would be creditable for a specialist.

Abbot's interests were not narrowly bookish at any period of his life. While in college, he pulled for a time with his class crews, rowed in the single-scull races, played tennis, and was a skilled hand with the paddle. With

other Harvard students, he did practical work among the poor of Boston, under the supervision of the Associated Charities. He was business manager and editor of the college literary magazine, the *Harvard Monthly*, for two years, and an officer of the two literary societies, the Signet and the O. K. He was also active in social life, keeping himself in touch with a large circle of friends. His keen enjoyment of music and the theater, and his minute familiarity with the masters of our literature, rounded out the accomplishment of this young manhood. A strong, normal physique, and a normal, well-ordered mind, made it possible for him to devote himself successfully to these many diverse interests.

After graduation, Abbot spent a summer in traveling in Europe. Switzerland, which he now saw for the first time, he determined to revisit for training in mountaineering; he made, also, a pedestrian tour through the mountains of Norway. On his return, he entered the Harvard Law School, from which he graduated three years later, in 1893, with a brilliant record. While in the Law School, he became manager, and finally editor-in-chief, of the *Harvard Law Review*, a publication which Sir Frederick Pollock pronounces to be the best law periodical in English. He was also chosen one of the original directors of the *Harvard Graduates' Magazine*. After taking his degree, he was elected treasurer of the Harvard Law School Association; and it is not too much to say that its brilliant celebration in 1895—when, through Abbot's personal influence, Sir Frederick Pollock crossed the Atlantic solely to attend the anniversary and deliver its oration—was largely due to the arrangements made by this young lawyer. His personal acquaintance with many of the great law-writers of England—Mr. Dicey, Mr. Maitland, Mr. Justice Frye, Mr. Bryce, and others—had stimulated his interests in the scientific aspects of his profession. In 1895 he was ten-

dered a professorship of law in Cornell University, which he felt obliged to decline, and a similar appointment at the University of Wisconsin was offered him only a few days before his death.

The year 1893-94 Abbot spent in the law office of Messrs. Warren and Brandeis, at Boston; from 1894 until his death, he was engaged in the law department of the Wisconsin Central Lines, at Milwaukee, where, in 1895, he was made General Solicitor for the Milwaukee and Lake Winnebago Railroad Company, and took special charge of the construction of the Manitowoc line, which was opened only ten days before his death. His duties during these last two years were varied and full of large responsibilities. He had already achieved what was, for so young a man, professional distinction, and won both the confidence and the respect of the Federal and the State Courts of Wisconsin, before which he appeared in important cases.

The summer of 1892 Abbot spent in the Alps, "the university of mountain-climbing," as he aptly describes them. Hitherto his climbing had been but the chance sport of vacations, although he had had experience in widely diversified regions from the Sierra to the mountains of Norway and the White Mountains of New England. In company with Peter Sarbach, a celebrated Swiss guide, he ascended the Matterhorn, the Gabelhorn, the Weisshorn, the Rothhorn, Monte Rosa, and other peaks, thus gaining a valuable training in ice- and snow-fields. Fresh and vivid accounts of these expeditions may be found in two papers which Abbot read before the Appalachian Club,* "An Ascent of the Weisshorn," and "Three Days on the Zinal Grat." In 1892, he made a second visit to the Yellowstone Park, where he had, on his first visit in 1887, passed over Mt. Washburn. During July and August of 1895, in company with other members of the Appalachian Club he

* Printed in *Appalachia* December, 1893, and March, 1894.

visited the Selkirks, a region little explored, on the line of the Canadian Pacific Railroad in British Columbia. Three members of the party—Prof. C. E. Fay, Mr. C. S. Thompson, and Abbot—climbed Mts. Hector, Castor, and Stephens, and made a reconnaissance on Mt. Lefroy.* After a month spent in exploring this new field, Abbot returned to Milwaukee, determined to revisit the Canadian Rockies at the earliest opportunity. Only four parties besides this one of the Appalachian Club have attempted to do systematic mountaineering in this region; many of the commanding peaks have never been reached, and thirty miles north of Laggan extends a stretch of glaciers and snow-fields unexplored by civilized man. This was virgin soil which fired Abbot's enthusiasm for discovery.

At the end of July of the following year, Abbot joined the little party of the Appalachian Club—Prof. Fay and Mr. Thompson, of the former expedition, and Prof. George T. Little, who was unfamiliar with this region—for a new exploration of the Selkirks. In preparation for this expedition, Abbot had learned how to use the barometer and plane-table in making field-maps, in order that he might in some way turn his sport into larger uses. His early-acquired information in geology, botany, and entomology had been extended by his experiences in the mountains. Undoubtedly, had he lived, he would have made some valuable contribution to the literature of mountaineering.

Arriving at Glacier House, July 31st, the party made the ascent of Mt. Rogers in the Selkirks, intending later to climb Mt. Lefroy (where they had been foiled the year before), Mts. Biddle and Sir Donald, and make a thorough exploration of the thirty-five-mile Waputtehk ice-field on the Continental Divide. Having returned to the Canadian

*Accounts of this expedition may be found in *Appalachia* for January, 1896: *The First Ascent of Mt. Hector*, Philip S. Abbot; *Mt. Castor and the Asulkan Ridge*, C. S. Thompson; *Another Story of Mt. Stephen*, Prof. C. E. Fay.

Rockies, they examined the base of Mt. Lefroy on August 1st, for a feasible point of approach, and Monday, August 3d, one year to a day after their first attempt, started from the chalet on Lake Louise for the unconquered summit of Mt. Lefroy.

Few lives of twenty-eight years have been so crowded with undertakings of a high order as Abbot's. There was no side of his many-sided character left neglected or stunted. His broad intellectual interests were genuine; it was not pedantry which made him prefer on a railway journey Homer, or Dante, or Wordsworth, to a novel. Another characteristic equally strong was his love of whatever is human. To old and young, in all conditions of life, he brought something—a sense of power and fineness in living, which entered into their lives.

Of this many-sided character nothing can be said which would adequately describe those more intimate qualities that made him far more than a fine machine of intellect and will. His humor, his objective, eager interest in whatever was really worth effort; his loyalty and effacement of self—these qualities all know who worked with him, either on the mountains or in the office. He seemed to unite an old man's sureness of judgment and a mature man's trained energy of mind with a young man's enthusiasm and liberality. His personal tastes in living were always extremely simple; in the midst of a luxury-loving college world, he chose to live carefully, in order that he might spend generously.

Still more subtle but pervasive was the unstained purity of his life; no human being had anything but good from Philip Abbot. He lived fully and gave abundantly to all, and, though but at the threshold of a career, he had accomplished *character*.

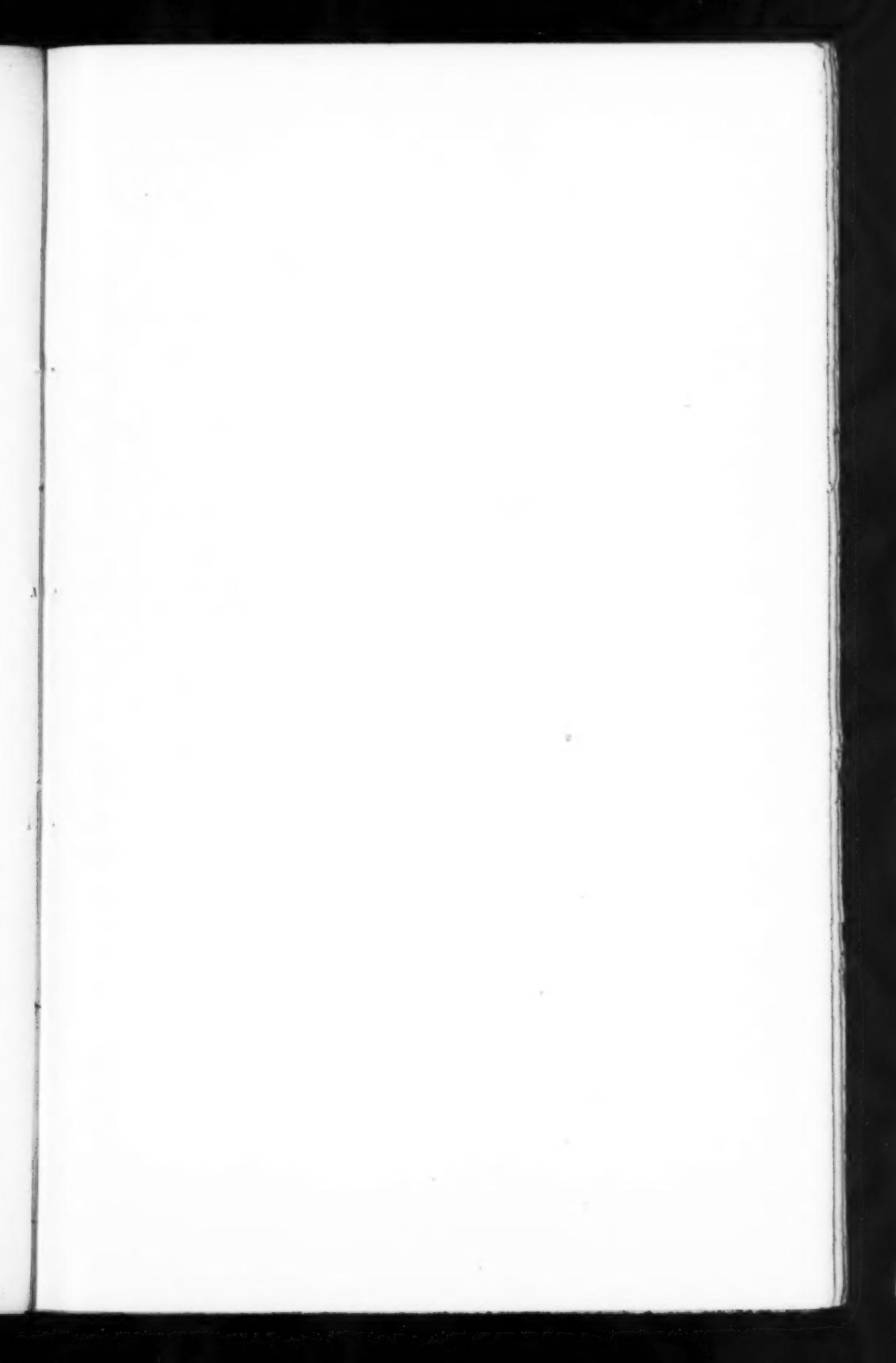
His passion for the mountains was in many respects the expression of his best life. Shortly after his return

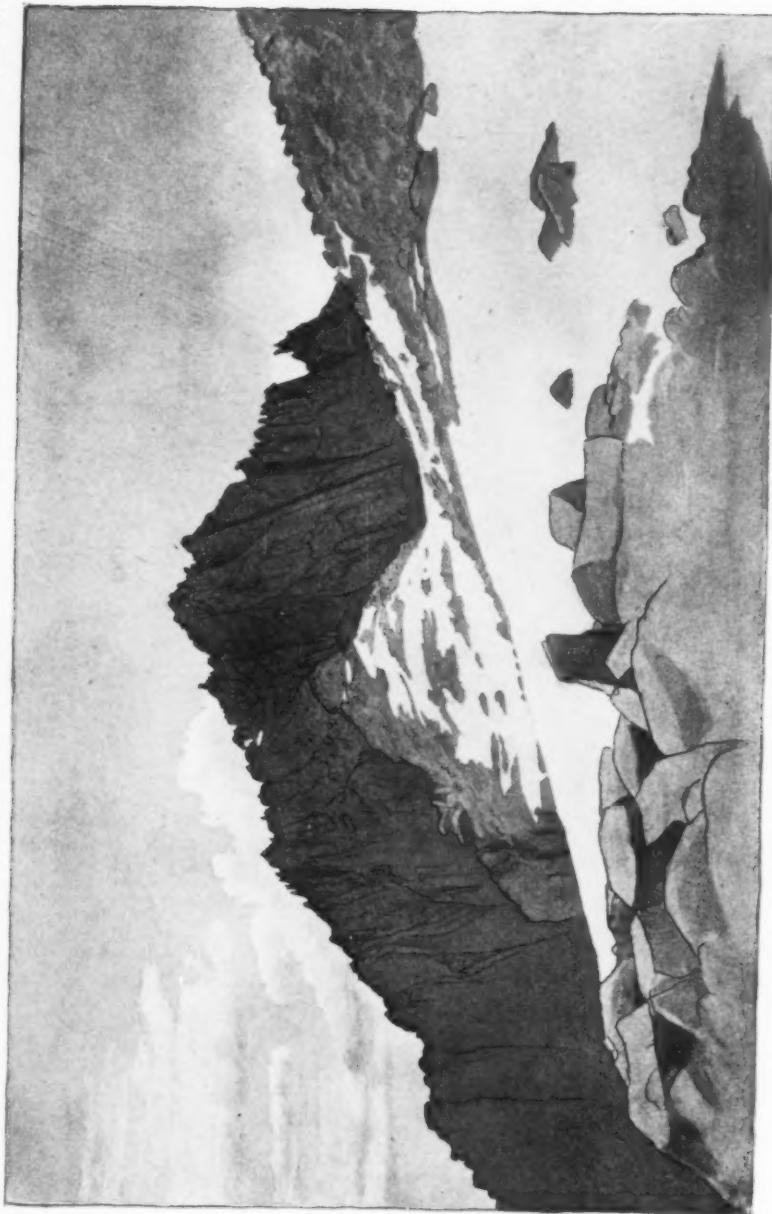
from the first expedition to the Selkirks, he wrote to an intimate friend:

"Palmer's old theory, that the nearest approach we can make toward defining the *summum bonum* is to call it 'fullness of life,' explains a great many things to me. Once we came out at seven o'clock upon the crest of a snow mountain, with two thousand feet of rather difficult snow-work before us, when I had expected plain sailing—and the daylight had already begun to fade. At the bottom of the two thousand feet we were, as it proved, still five hours from home; but we could have camped there. But where we were, there was nothing more level than the roof of a house, except the invisible bottom of an occasional huge crevasse, half-masked and half-revealed. I had been feeling lifeless all that day, and we had already had nine hours of work. But the memory of that next hour is one of the keenest and most unmixed pleasures I have carried away—letting oneself go where the way was clear, trusting to heels alone, but keeping the ice-ax ready for the least slip,—twisting to and fro to dodge the crevasses,—planning and carrying out at the same instant,—creeping across the snow-bridges like snails, and going down the plain slopes almost by leaps,—alive to the finger-tips,—is a sensation one can't communicate by words, but you need not try to convince me that it is n't primary. However, this is by the way."

"Fullness of life,"—that is the truest comment that could be made upon Philip Abbot. Fullness of physical life led him to test his steady nerves and vigorous body upon lofty mountains. Fullness of mental life gave keen delight in the problems of his profession, in a Greek chorus, in the intricacies of a new language, in a task, whatever it might be, if it involved intellectual effort. Fullness of imaginative life raised his sports from physical feats to sources of mental and spiritual enjoyment, and filled the hills and the ocean with beauty and mystery. And fullness of affection and faith in human relations made him an ideal son, a strong brother, and a friend who was loyalty itself.

CHICAGO, November 5, 1896.





THE SUMMIT OF MT. BREWER.
Drawn by Bolton Coit Brown from a sketch by Arthur B. Clark.

WANDERINGS IN THE HIGH SIERRA BETWEEN
MT. KING AND MT. WILLIAMSON.

By BOLTON COIT BROWN.

PART I.

On the 12th of June, 1896, my wife and I packed our mules, and set out from Sanger for the High Sierra. We spent the first night two miles beyond Centreville, to the delight of the mosquitoes, and the next three at the "Road Camp," four miles from Millwood. We slept one night at Round Meadows; and at Bearskin Meadows,—a delightful place,—remained twenty-four hours. From Burton's Meadows, where we camped three days, we made an expedition, and climbed Finger Rock, so noticeable a feature from Bearskin Meadows. We also gave half a day to a rewarding scramble out north, to the top of the walls that shut in the King's River; and the mountains afford nothing finer than the scenery we enjoyed. Moving deliberately on, we stayed five days at Horse Corral Meadows, and tramped to the summit of the glaciated point, a mile north; and another day ascended the peak south of the Meadow, crossing from it eastward, along the connecting ridge, to Lookout Mountain. The view, especially of the Roaring River basin,* Mt. Brewer, and the Kaweahs, was very grand. That day it rained hard while we were out, and our camp was, naturally, soaked. Again, we trudged to the southeast two or three miles, then northeast and up Grand Lookout, from which the wonderful view of the cañon and beyond into the great Sierra wilderness, with

*See BULLETIN, Vol. I, Plate XXII. Mt. Brewer is just in the center of the picture.

filmy rain and black clouds, and lighter regions pictur-esquely contrasting, we shall never forget. One might well put in a whole summer hereabouts. In our case, as it was, two weeks slipped away before we reached the cañon.

The evening we arrived it stormed, and John Fox hospitably sheltered us over night in his cabin. The next day we went on, and camped in the upper end of the cañon, where for some days we simply idled about and enjoyed ourselves. One morning the tracks on the ground showed that a bear had paid us a visit. Doubtless through fright at this same bear, the little pack-mule Peggotty ran away from the others and got lost. We trailed her through the jungle to the river's edge, but a diligent search for a mile along the other shore failed to discover where she came out; so we mourned her as drowned. However, she turned up all right afterwards, miles down the river, though how she got there is a mystery to this hour.

The saddle-mule we named Grasshopper, because he always jumped over the bad places in the trail. He seemed to be a right-minded mule, and we liked him. Having planned to see the Charlotta Lake country, we put a pack on him,—Satan, the other pack-mule, being too uncertain, and Peggotty so very small—and I started through the ford on the mare. In midstream, at a sudden cry from Lucy, I looked over my shoulder just in time to see poor Grasshopper swept by the powerful current off the ford into the deeps below. Instantly, I turned his lead-rope once round the saddle-horn and held as hard as I dared, while, with just the top of his pack and his head showing, he wallowed and struggled for his life to keep from being sucked under the big log-jam forty feet below. But the river was high and ran like a millrace, and I had to let his rope go, for fear he would pull my animal and me into the deep water also. He struck the jam just as the mare landed, and I sprang and ran for the logs. Meantime he continued to

make a splendid, and to my vast surprise, a successful fight; by the sheer power of his swimming, he was actually holding his own against the heavy onset of the river. With his submerged pack reeling drunkenly in the current, he looked like a sinking steamer, and for a moment it was an even chance whether or not he would be sucked under, to drown among the black snags beneath the jam. But now, just as he had got his head turned towards the side he started from, he suddenly stopped paddling, when, of course, the current pressed him tight against the face of the jam. There must have been a submerged log holding his legs, for he did not go under, though he made no effort, being momentarily exhausted. I hurried, but before I could get there Lucy, from the other side, had clambered out over the driftwood to him, secured his lead-rope, and by pulling and encouraging him, succeeded in getting him ashore.

And now while we waited for the wet pack to dry, there began a rain which continued for two days. At the end of this time we loaded Peggotty, and, joining forces with Mr. Le Conte's party, which came along just then, we all crossed together without mishap. Two days' travel brought us up to the valley south of Mt. Gardiner, where, ten thousand feet high, we camped in the rain under a lean-to of poplar branches. The second day I climbed Mt. Gardiner.* Lucy did not go. Upon the mountain, I had the pleasure of again meeting Mr. Le Conte and several members of his party.

We moved on, and at 10,700 feet established ourselves on a little promontory beyond Lake Charlotta. It was

* The frontispiece of the last *BULLETIN* (Vol. I, No. 8,) is a sketch of the northern face of Mt. Gardiner. The name of Mt. Kearsarge under it is a mistake. It is perfectly easy to ascend, except the last spur (the top spike in the sketch), which involves a crawl along a knife-edge, above the precipices there shown, and is not altogether easy. Mr. Le Conte and I, however, rather to our own surprise, succeeded in getting there. Indeed, Mr. Le Conte even carried a camera, set up his tripod on the dizzy pinnacle, and took a series of beautiful views. We were, apparently, the first to make the ascent.

raining; so we built a rude shelter of logs and sticks; and it served us very well for a week. One day we went up the red peak south of the lake (12,000 feet), and practiced mountaineering by following along the jagged crest just above the Cathedral Spires, looking down 4000 feet into Bubb's Cañon. A fine thunder-storm, growling over in the Mt. Williamson region, sent electricity at us. The invisible something passed with tingling prickles and a thin, squeaky, crackling sound through our outstretched finger-tips; and Lucy's front hair streamed out towards the storm, like the pictures in the high-school books on physics, and "buzzed," as she said.

Our provisions having run out, I took Peggy back to the cañon for more, making the trip down in four hours. On the morrow, accompanied by Dr. Wood and Dr. Little of Stanford, I brought back a hundred pounds of groceries. We arrived just at dark, and Lucy, who had been alone two days and a night, was right glad to see us.

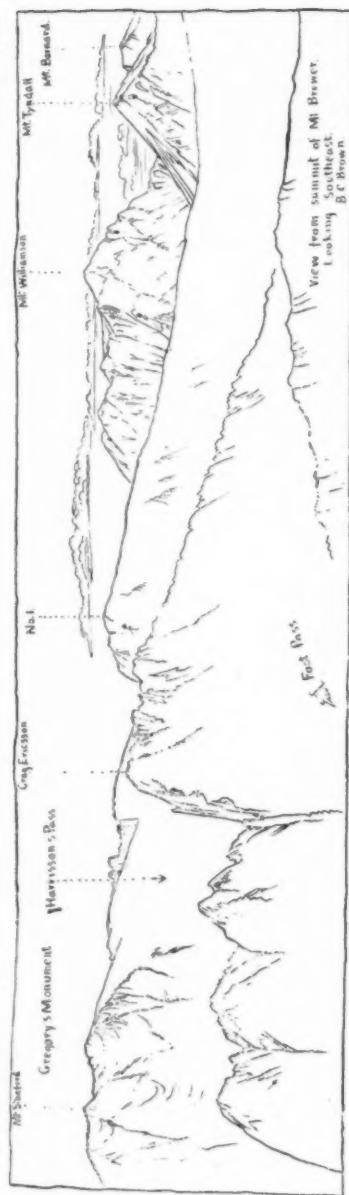
Next day we visited Kearsarge Pass (12,000 feet), and climbed the peak (13,300 feet) immediately north of it. At another time we explored with especial delight a chain of lonely, snowy tarns, hidden in the wild mountains north of Lake Charlotta. We also climbed the small peak (12,000 feet) southeast of the lake. Moving still higher up, we camped at the timber-line above Bullfrog Lake, whence we ascended University Peak (13,990 feet). The next day we went a-fishing, with unlimited success; the biggest trout we caught measured fifteen inches by the tape.

From here we traveled down the Rhoda Creek trail and up the south fork of Bubb's Creek—which suppose we call South Cañon. I think the less this painful name of Bubb's is spread around the mountains, the better. Camping on East Lake in South Cañon, we set out early one morning, and at about eight o'clock had reached the summit of



LOOKING ACROSS EAST LAKE TOWARD MT. BREWER.

From a drawing by Bolton Court Brown.



Mt. Brewer (13,886 feet).* On the way down we developed a scheme for leaving Peggotty, and going ourselves over the King's-Kern Divide to climb Mt. Williamson. Though Lucy had never before been in the mountains, yet already she had become so hardy and skillful a climber that I hesitated at nothing on her account. After much discussion as to whether we had rations enough, we decided to risk it and start the next morning.

Having baked up all the flour into eatables, we packed it on our backs, and headed up South Cañon. A mile above East Lake the stream forks, and, following the eastern branch, we soon reached a round, beautiful lake. This we named Castilleja Lake, the castilleja blossoms being especially perfect and brilliant upon its shores.† From here we passed directly up the immense gorge to the south, and climbing the wall at its head, found ourselves on the crest of the King's-Kern Divide, looking straight down Kern Cañon.

It had rained all the morning, and was now so misty that not a peak was visible; we, therefore, had to go pretty much by guess. We traveled southeast through an immense labyrinth of lakes, ponds, pools, and puddles, having crossed which we came round the southern end of the last lake against the eastern basin-wall, shaped just like South America, and climbed into a low, rounded saddle beyond. Now we were on the back of a long red spur, which, from the big mountain (No. 1.?) on the north, extends some miles to the south. As the clouds and rain still hid all the peaks, we knew nothing better to do than to follow the

* See Plate IV at the head of this article. The spectator is upon the low eastern ridge that runs from East Lake to the summit, seen at the extreme right in Plate V. The line of ascent may be almost anywhere on this ridge, until you reach the point where it joins the peak. From here there seems to be only one practicable route, which is to climb through a small notch just where the drawing shows two little snowbanks. Once through this notch, you go up easily upon the other side.

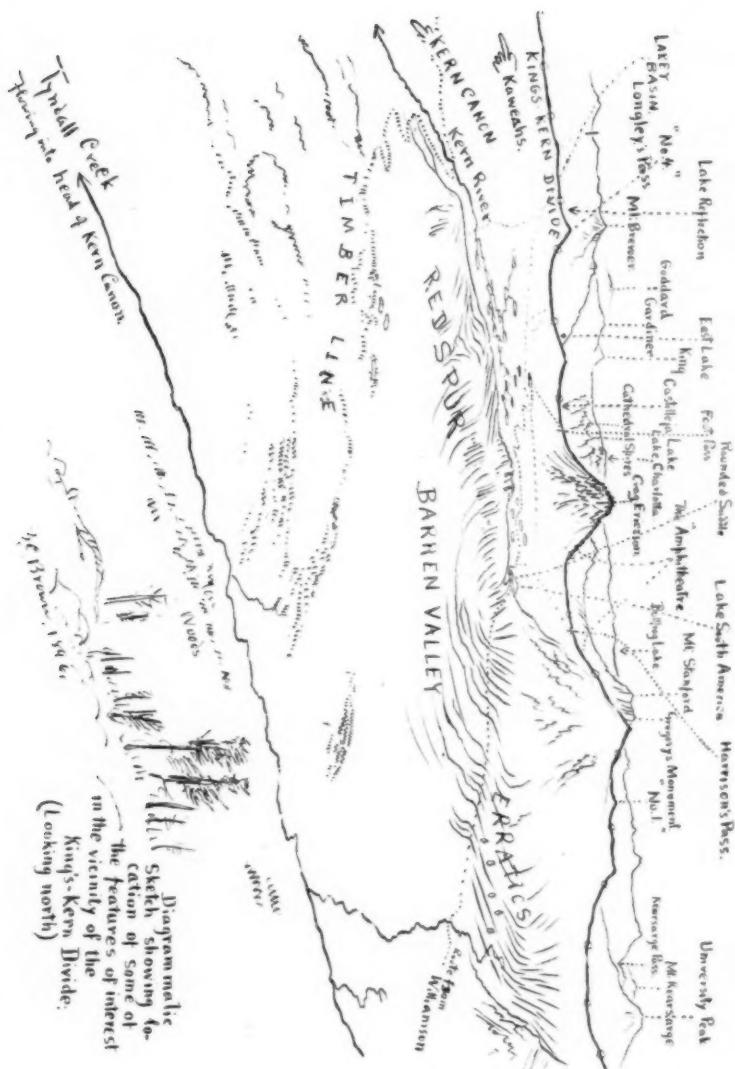
† See BULLETIN, Vol. I, Plate XXV. A photograph by Longley, showing this lake and its setting very well. You are looking northwest.

back of this red spur southward to its termination in a high plateau overlooking the rugged, broken region at the beginning of Kern Cañon.* Descending from the plateau, we tramped eastward along the timber-line, past several small lakes; and at last, as night was approaching, and we had only the vaguest notion of where we were, we prepared to bivouac.

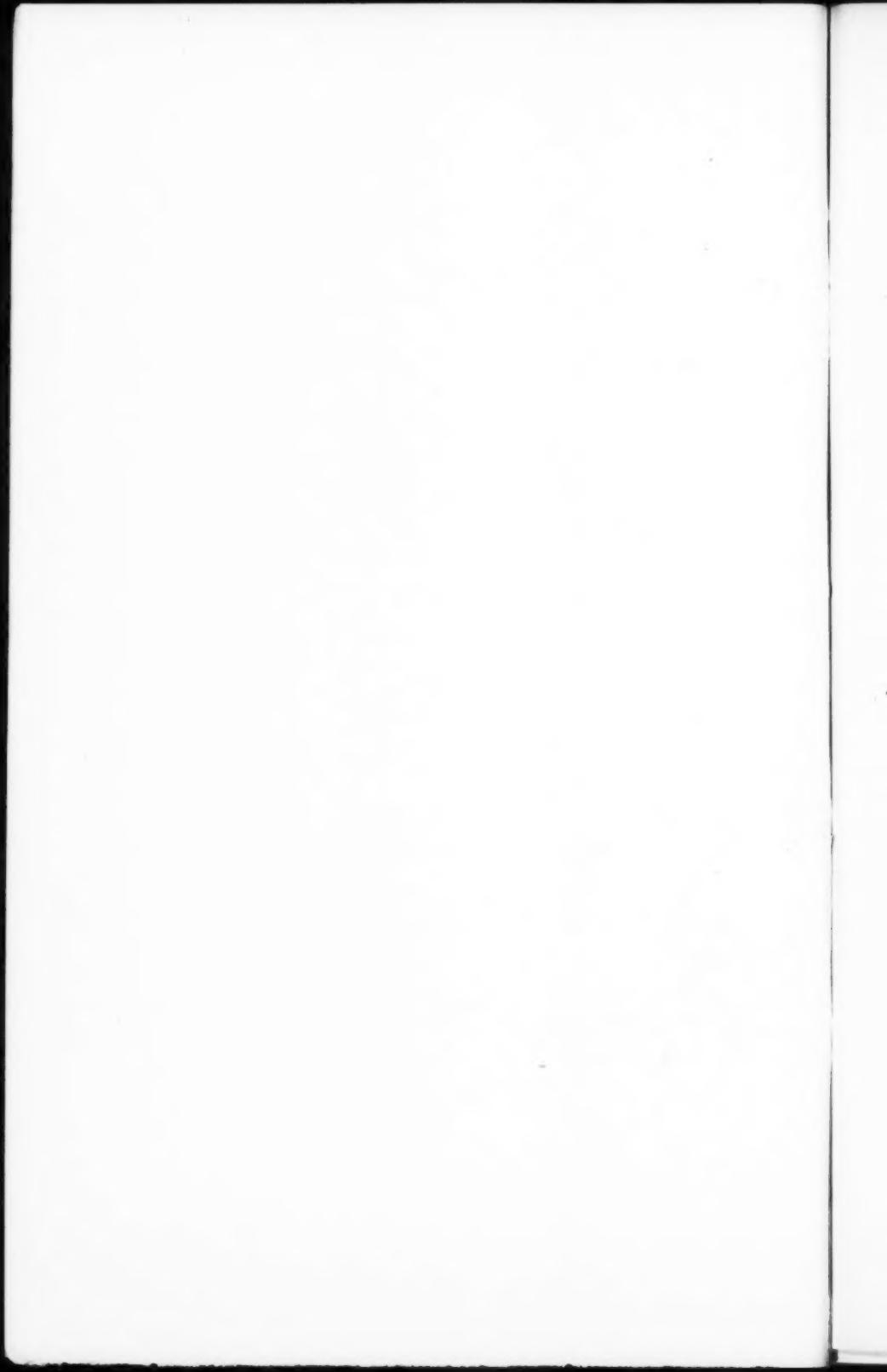
The elevation must have been more than 11,000 feet; and a cold, steady rainstorm was blowing, with no signs of improvement. We had neither blankets nor even coats, and no tools with which to make a hut, and as there were no caves, nor even a protecting ledge, we said nothing at all about the matter. Lucy, bending over to shelter them with her back, handed me dry matches, wherewith, however, I failed to get a fire, because everything was too wet to light. With an ax, or even a big knife, it might have been done; but, as it was, we gave it up. But now, rather than lie all night there on the rocks in the storm, we determined to go back a mile to where we had seen a burning log, probably left by some

*See Plate VII. Sketch of bird's-eye view looking north at the southern side of the King's Kern Divide,—as seen from an imaginary point in space. Longley's photograph, Plate XXVII, furnished some of the data, and my memory the rest. Of course there is here no effort to give correct relative heights or distances, or the forms of the peaks. It is intended merely to convey a general idea of the arrangement of things. This territory is sure to become important to mountaineers; for, barring the discovery of some better pass than is yet known, it is the most natural highway by which trampers can, from camps on East Lake, or Castilleja Lake, easily visit Mt. Williamson and the others. In doing this, either Harrison's Pass or the one we discovered and which I have marked "Foot Pass," may be used. The latter is very much nearer to Castilleja Lake, and not more difficult than the other; also, it is considerably lower. As a mere matter of speed and convenience, I should prefer it. If one had the extra energy and time, however, it would be well worth while to go one way and return the other, for the sake of the scenery. You have to go by "Lake South America," no matter which pass you take.

The best ascent of Crag Ericsson is from the top of Foot Pass; that of Mt. Stanford, from the top of Harrison's Pass. The latter mountain, being a part of the divide between the head-basin of Bubb's Creek and the head-waters of the south fork of Bubb's Creek, might be climbed from the northeast from the Bubb's Creek basin, but it would not be at all convenient. Mt. Stanford and others upon the divide which are not given, approach or reach, according to Mr. Le Conte's latest observations, a height of 14,000 feet. To suggest the scale, I may say that Red Spur is some two or three miles long.



(Diagrammatic sketch showing features of some of the features of interest in the vicinity of the King's-Kern Divide. (Looking north))



herder. On the way, however, we came across a big log which looked rather promising, and, to our great joy, we actually fired it up. Then we piled on so much wood that it became a roaring furnace which drove us back and back, and scorched the bag of provisions, and made us so hot and steamy that we were veritable pillars of cloud. But still it rained.*

Darkness came on, and by the time we had finished our lunch, we were so tired that we just lay down among the dripping stones, and, even while the storm beat upon our sun-burned faces, fell asleep. But such slumbers are very intermittent, and we never passed more than a few minutes without waking, and probably hunting out a new place to lie on, or, at least, turning the frozen, wet side to the fire, and the roasted side to the wind and rain.

About three, the rain ceased to fall, and not long thereafter, as we munched our breakfast in the dawn, the storm-clouds broke and fled away and hid themselves among the snowy fastnesses of the Kaweahs; and the sunrise came so glorious that we were repaid over and over for all the dreary night.

* See BULLETIN, Vol. 1, Plate XXVII. This bivouac was, in this picture, just one inch from the left-hand edge and two inches from the lower edge. The title of this plate is in error as to Madary's (or, as it should now be called, Harrison's) Pass, that pass itself being too low to be seen in this picture. The spot which its explanatory foot-note would seem to mean is the one given in Plate VII as Rounded Saddle. In the photograph, the ridge forming the sky-line of the left half of the picture is Red Spur, and its edge connects (though hardly visible here) with the slope of the mountain to the right of the dead tree. This mountain is a southern spur of the higher one to the right, which is practically Mt. Stanford, though the summit is not quite in sight. The peak to the left of the dead tree is not on Red Spur at all, but two or three miles beyond. It is the one we called Crag Ericsson.

To the casual reader these mountain pictures are merely scenery, but to the mountaineer, the one who actually travels in these regions, they are topography of the most valuable kind. It should not be forgotten that these are positively the only public records of these places in existence. They are often more useful than a map; in the first place, because in this case there is no map, and in the second, because it fixes the topography upon the mind through objects which are always in sight,—that is, the peaks and ridges, which are pictured so that you *recognize* the originals when you see them,—instead of fixing it by streams, which are the least conspicuous features there are, which often cannot be seen at all until you come to them, and whose character and "falls," "fords," and "blazes" cannot be known until you visit each one in detail.

Leaving the timber, we tramped up for a mile, to get a general outlook, but remained still uncertain where Mt. Williamson was. At last we decided to try climbing the mountain two miles north of us, a splendid, rough peak, apparently about 14,000 feet high.*

Lucy was not at all used up by our twenty-four hours of hardship and exposure, and would not hear of returning to camp without climbing something. But, as it turned out, this mountain, though fine, was not Mt. Williamson; for, when we had gone some hundreds of feet up it, the rugged mass of Williamson appeared, unmistakable, miles away to the southeast. At once abandoning our contemplated ascent, we backed down and hurried across the basin at the head of Tyndall Creek to the wide, high saddle sweeping between Mt. Tyndall and the peak northeast of it. This great saddle, which is a part of the Main Crest, we crossed before eight o'clock; and clambered down into the beautiful and amazingly wild and rough Alpine bowl that fills the triangle between Williamson, Tyndall, and Barnard.

* See BULLETIN, Vol. I, Plate XII. A photograph by A. W. de la C. Carroll, looking northwest from the summit of Williamson, and very interesting topographically. The mountain referred to in the text is one and a half inches from right edge of picture. The edge of the crater-like hollow (one and a half inches up from right-hand corner of plate) is the King's-Kern Divide; the edge just below it (seven-eighths of an inch up from corner) is, however, part of the Main Crest Divide. The actual Main Crest—by which I mean the dividing line of water-flow—crosses the picture about half an inch up from the edge, and runs up the steep slopes on the left, which are the northeast face of Mt. Tyndall. The flat-topped mountain (two and a half inches from right edge), I take to be "No. 1," and Mt. Stanford should be very near and exactly behind it. Mt. Brewer is three and three-quarter inches from right edge, and the little saw-teeth one inch to the left of Brewer are Crag Ericsson. The peak three-eighths of an inch from left edge is, probably "No. 4." Ericsson, Stanford, No. 1, No. 4, and the big mountain one and a half inches from right edge, are on the King's-Kern Divide. The basin that forms the main part of the center of the picture is the head basin of Tyndall Creek, which flows off the picture to the left. We crossed the divide between Crag Ericsson and No. 4, and practically followed up the Tyndall Creek basin and came up over the foreground of the picture, towards the spectator. This place is much bigger than it looks, and is the "wide, high, sweeping saddle between Mt. Tyndall and the peak northeast of it," referred to in the text. Just at the edge of the picture to the right, the smooth saddle breaks away; and this is the northern rim of the big bowl referred to. In coming out we came up over the larger snow-bank at the left. Plate XI (a continuation, to the left, of the same view) shows the western wall of the bowl—the eastern face of Mt. Tyndall. That cliff is probably two thousand feet high.

Mt. Williamson, which is not on the Main Crest, but to the east of it, towered in the morning light, dark, massive, and bristling—a stupendous pile and a most impressive sight. Its shape may be likened to that of a house, with gables east and west. Having crossed the bowl, we attacked the mountain by climbing up two or three hundred feet over a small, reddish slide at its extreme northwestern angle. Thence we followed a previously selected diagonal upwards across the western end of the house, and gained a small notch near the eaves on the southwestern corner.

The climb to this perch, though not especially dangerous, was exceedingly rough, and very impressive because of the vast heights above, that seemed almost to overhang us, and the vast depths below, that we seemed almost to overhang. Looking through the notch, we saw the southern face of the peak—a wilderness of vertical crags and gullies, seemingly impassable. Yet the hope of finding there a line of ascent carried us out among them, where, after some really ticklish cliff work, we got upon the lowest seat of a bottomless amphitheatre with very high and steep sides. Wallowing up to the top of a big snow-bank, we managed to squirm from it on to the next ledge; thence we edged up a crack to the one above, whose smooth slope was ascended by sitting down and shoving ourselves up backwards with the palms of our hands. The next step we reached by cross-bracing ourselves against the sides of a vertical crack; everything the gymnasium ever taught us, and several things it neglected, now came in play. Eventually, up the bottom of a narrow, steep chûte, over patches of snow and ice, with plenty of all-over climbing, we got up the highest and steepest part of the southern wall of the peak—through the eaves, as it were,—and upon the more moderate slope of the roof. From here to

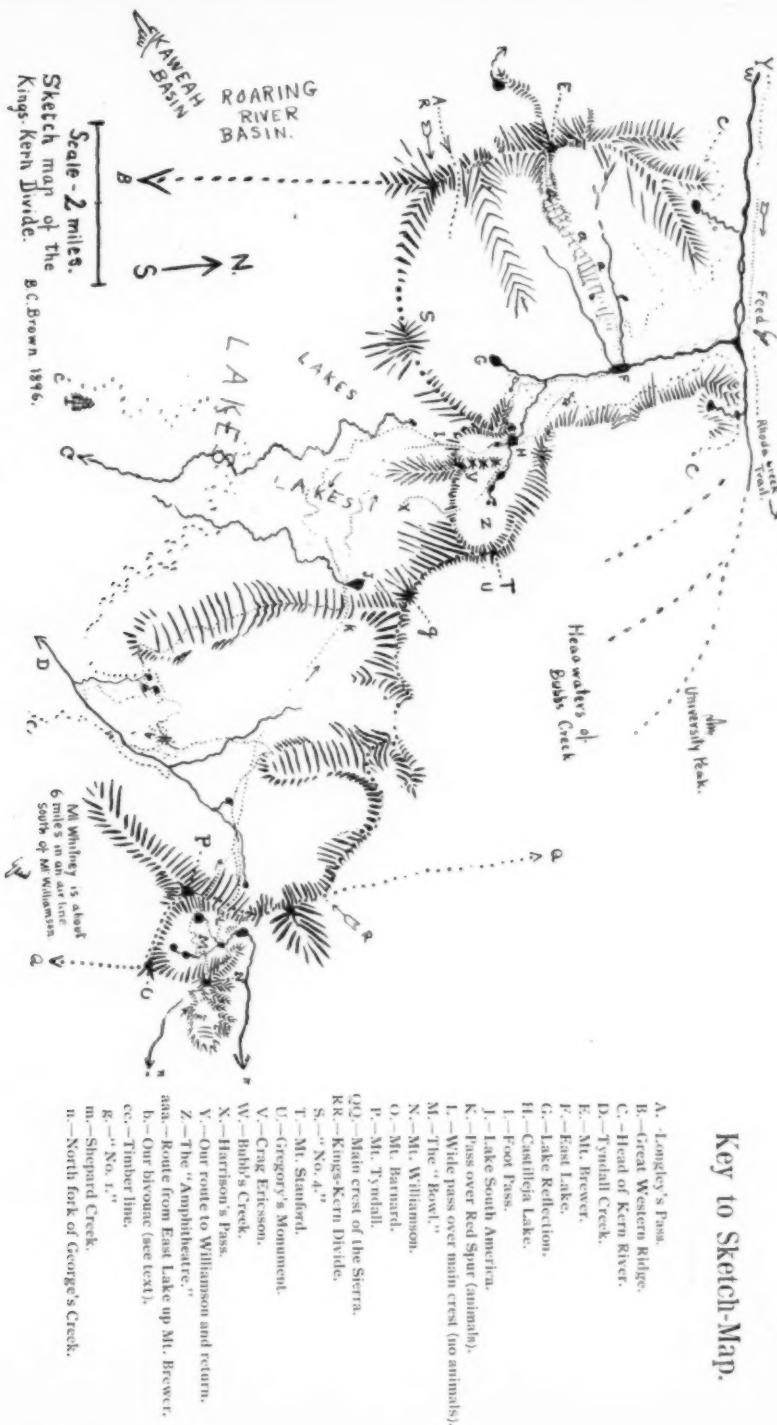
the ridge-pole, and thence westward to the summit at its end, was easy.*

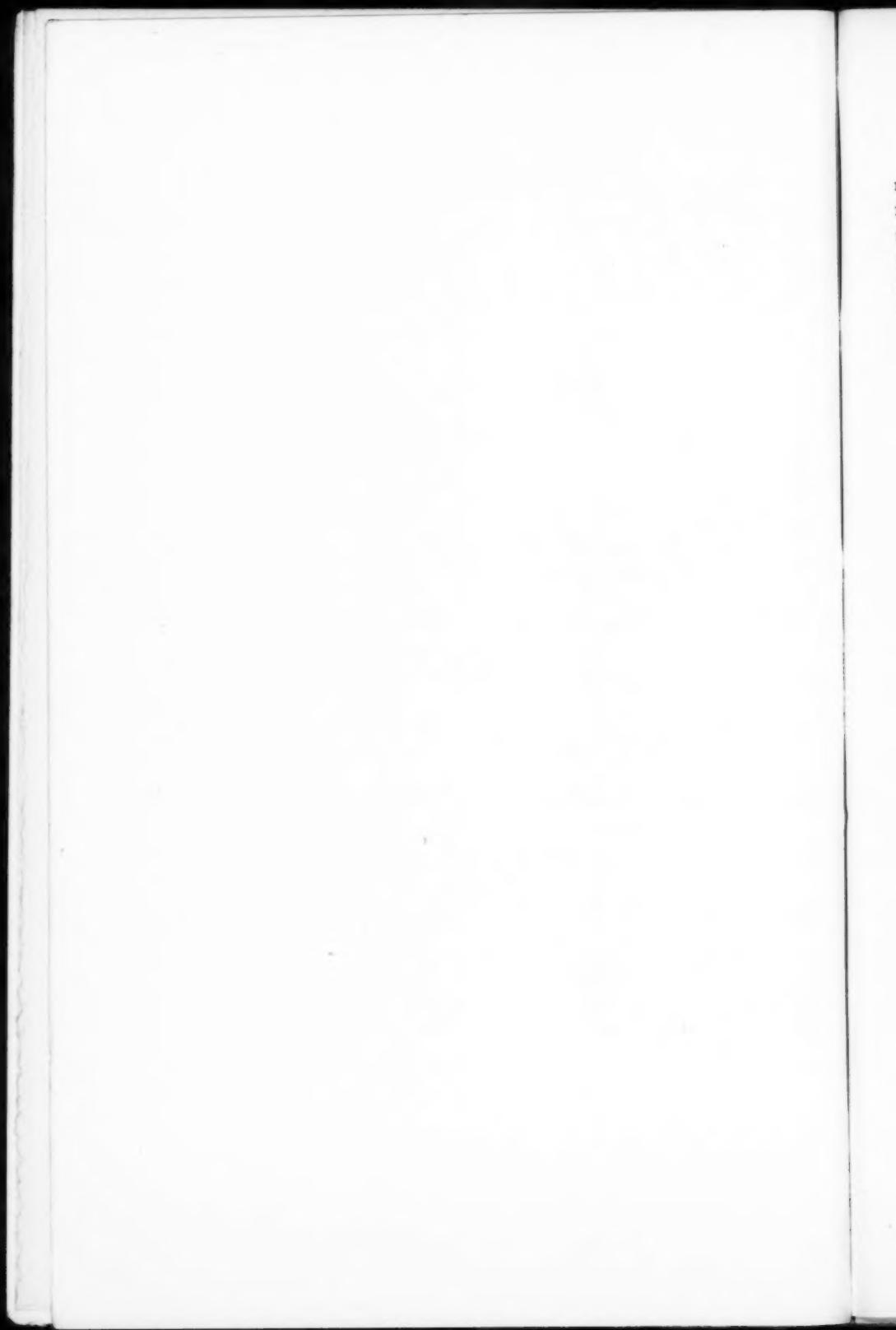
By noon we had conquered our mountain and stood 14,448 feet above sea-level. Naturally, the view is something to be experienced rather than described. Everything in that part of the world is in sight. Gazing off into the immense pale distances of mountain and plain, where it seemed as if one saw away into Colorado to the east and Mexico to the south, we marveled at that magic of atmosphere and light and distance which could transform mere flat earth and barren mountain into these enchanting visions of ravishing beauty. Flocks of gentle clouds floated in white multitudes beneath us, while their violet shadows dappled the mountain ranges and the tawny desert. Owens Valley, hardly five miles away, lay ten thousand feet below. Scores of miles to the south, that great inland sea, Owens Lake, stretched its vast surface of heavenly blue; and, wide as it is, so great was our height, that whole topographies of mountain ranges and wide plains beyond it lay piled up into the sky in level layers, and lost themselves along the immensely remote and hazy horizon. About us, and visibly beneath, stood the compact host of silent, beautiful, restful mountains; snow-spotted, cloud-shadowed, sun-lighted, changing always, yet each in his place changeless since the dawn of primeval time.

The summit, if I remember rightly, held records of three ascents, of which one was made fifteen years ago. I think they were all from the plains of Inyo County to the east. Perhaps we were the first to reach it from the west. On the return we fully monumented our route as far as the

* Clarence King, in his much-exaggerated account of this country, says that Mt. Williamson is an "inaccessible bundle of needles." But, having gone over some of the country he describes, I am strongly inclined to suspect that there was a general tendency with Mr. King to put down the things he did not himself do as impossible. His book is very far from giving a true impression of the region from Brewer to Tyndall.

Key to Sketch-Map.





notch in the southwestern corner; and beyond this left a few marks down along the western face. Among such a multitude of crags and crannies there may be many ways of possible ascent; but from all that we saw, both going and returning, they would seem to be rather scarce, and not easy to find in a limited time. Two friends of ours, who attempted it a few days later from the same side, failed to make the summit through going up a chûte, the head of which turned out to be a cul-de-sac from which they could not climb out.

Reaching the bottom of the bowl in the middle of the afternoon, we crossed it and climbed out over a steep snow-field close under the awful precipices of Tyndall's eastern face. It would be easy to ascend Mt. Tyndall by its northern angle. We talked, in a joking way, of doing it then and there as we passed; and Lucy declared her ability to compass it and get back to timber before dark. Probably we could have done it, ascending in two hours and descending in one; but we refrained. Our labors were beginning to tell on us, our shoes were worn to tattered wrecks, and, besides, we feared the storm had raised East Lake so high as to cover the grass where Peggotty was tied. The fore, although it had taken us a day to get from camp to the point where we now were, we determined to try to return that night. And we did it,—though we had to run part of the way. We tried hard, but failed to make the pass over the divide by sunset, and, arriving just at nightfall, had to go rattling down its steep northern gullies, all wet and slippery, in the dark. Thence, through a mile or two of the usual glacial piles of huge blocks, relieved by an occasional pallid snow-field, we descended without accident; and, leaving Castilleja Lake on our left, worked through the granite ledges into the dark pine-woods below. Down through these, by our sense of general direction, we stumbled and slid; and finally, at about ten o'clock,

reached the camp at East Lake. That day we tramped and climbed, at speed, for fifteen hours, during the last six or seven of which we had not paused for two consecutive minutes. The lake had risen two feet, and quite covered Peggotty's poor little grass; but some wandering mountaineer had come to her rescue and tethered her on the feed above. Next day we returned to King's River Cañon, where we found most of our stock all right; but Satan had run away again—fallen in love with a herder's outfit, and followed it over into the Middle Fork basin, as we afterwards heard.

MOUNTAIN TRIPS; WHAT TO TAKE, AND HOW TO TAKE IT.

BY HOWARD LONGLEY.

These are questions of grave concern to every one who contemplates a journey into the heart of the Sierra, far removed from any source of supply or assistance. Not novices alone, but the more experienced as well, unless they have recorded the teachings of previous trips, find it difficult to determine just what, and how much, to take upon a trip of a given length; and frequently discover, in the recesses of the forest, that the article they then most need was forgotten and left at home. Not only that, but the trained mountaineer has learned many expedients which more recent recruits would be glad to know; but there is very little published information available. Such thoughts prompt the writing of this article. Not wishing to be considered an authority, we still hope to be of some assistance to those younger in mountaineering than ourselves; and, better still, to arouse an interest in the matter which will draw out, in future numbers of the BULLETIN, the ideas of those old Sierra veterans who can speak to the advantage of all.

WHAT TO TAKE.

FOOD.—The following is a list of provisions taken by our party last summer, the quantity of which will be found abundant for three men for two weeks. While it is believed no essentials are overlooked, individual tastes will readily suggest changes. It is advisable to take only the best quality of goods. *Meats:* 9½ lbs. ham, \$1.25; ½ lb.

deviled ham, 15c.; 4 lbs. corned beef, 45c.; 1½ lbs. (6 cans) sardines, 85c.; 2 lbs. salt pork, 20c. *Vegetables:* 2 lbs. rice, 10c.; 6 lbs. (2 cans) tomatoes, 20c.; 2 lbs. (1 pkg.) germea, 20c.; 2 lbs. (1 pkg.) prepared buckwheat, 20c.; 2 lbs. (1 can) corn, 15c.; 3 lbs. split peas, 20c.; 1½ lbs. Lima beans, dried, 6c.; 20 lbs. potatoes, 40c.; 8 lbs. onions, 15c. *Fruit:* 2 lbs. prunes, 25c.; 3½ lbs. dried fruits, 40c.; 30 lbs. (10 cans) Flickinger's canned fruits, \$3.00; 3 lbs. raisins, 30c.; 3 lbs. (1 doz.) lemons, 25c. *Miscellaneous:* 2 lbs. salt, 5c.; pepper, 10c.; 12 lbs. sugar, 75c.; 9 lbs. cottolene, 90c.; 3 lbs. butter, 65c.; 11 lbs. (11 cans) Highland evaporated cream, \$1.65; ¾ lb. Van Houten's cocoa, 75c.; 4 lbs. (2 pint bottles) gherkins, 70c.; 4 lbs. (1 qt.) olives, 20c.; 3 lbs. soda crackers, 25c.; 13 lbs. flour, 30c.; ½ lb. baking powder, 25c.; 6 lbs. (2 doz.) eggs, 40c.; ¼ lb. matches, 5c.; can-opener, 10c. Total weight, 172 pounds; total cost, \$15.86.

It will be noted both dried and canned fruits and vegetables are enumerated. The former require considerable preliminary soaking, and a longer time to cook; and, while traveling, the advantage of having some canned goods, which can be prepared in a few minutes, more than offsets the objection to their greater weight. Besides, they afford an agreeable variety. We took cocoa, rather than coffee, because it is more strengthening and less bulky. We tested several brands of condensed milk, but found the Highland cream more palatable, although a greater number of cans is required. Rice and germea, with this cream, were popular dishes. So were the dried peas and lima beans, cooked with the pickled pork. In making up one's list, it should be remembered that rice, germea, buckwheat, etc., are equal to several times their weight in flour. The first week's lunches exhausted the crackers, the last of them being much broken. Cottolene was used instead of lard, because it keeps better, and is not melted as readily by hot

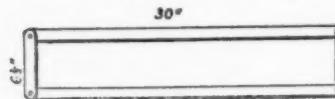
weather. Two small buckets of it are more convenient than one large one. We got fresh butter the day before starting, packed it in a tin can with a large-sized screw top, and it was as palatable the last day of the trip as the first. Five or six dozen eggs, packed in bran in a small box, were taken as an experiment. They kept fresh for over a week, but by the ninth day were spoiled by the severe jolting. The lemons served to disguise the unpleasant flavor of water from meadows where sheep had pastured; and the olives went with the first week. Raisins are nourishing, and a small pocketful will stave off hunger when on forced marches.

DISHES.—A knife, fork, and spoon apiece, of course;—steel knives, well sharpened. Also a plate apiece, and two or three extra ones to serve on. Cups are also necessary; and, if you want to avoid burnt fingers, they should have handles. Two saucers apiece will prove acceptable. The above articles can all be had either of tin, granite ware, or aluminum; but crockery should not be taken. We got, of granite ware, enameled white, and hardly distinguishable from porcelain, a cup and deep saucer for 45 cents, and a mush-bowl for 20 cents. The three bowls and three saucers which we took fitted into each other so as to take but little more room than one bowl.

It is also desirable to have two cans made, costing about 20 cents each, and holding about a quart, and having large openings with screw-tops. These carry safely on the road unused portions of cooked food, which would otherwise have to be thrown away, or else carried in open cans, with much risk of loss and of damage to everything in their neighborhood.

COOKING UTENSILS.—Of these, we found the following articles sufficient: 2 or 3 large spoons for cooking; 1 pancake turner; 2 sheet-iron 8-inch frying-pans, costing 40 cents each; 2 8-inch granite ware stew-pans, costing the

same; and 2 buckets of heavy tin, made to order for about \$1.50. The smaller was 9 inches in diameter and $8\frac{3}{4}$ inches in height, having a lid (with ring) and a wire handle of the same diameter as the bucket. The other was $10\frac{1}{2}$ inches in diameter, 10 inches in height, and had a lid (with ring), a handle, and 2 rings riveted on the bucket near the bottom at points midway between the ends of the handle. There should be no solder used in making these buckets, or they will fall apart when subjected to the heat of the camp-fire. As the smaller bucket was placed in the larger, and its outside therefore had to be kept clean, it was never allowed on the fire, but was used exclusively for carrying and keeping on hand fresh water, while the larger one was used for heating water and general cooking purposes. We avoided many of the discomforts of cooking food over an open fire by having a hollow handle made of tin, one foot long, and flattened at one end so as to readily receive say three inches of the handle of the frying- or stew-pan. With this little implement, costing ten cents, always cool in our hand, we could stand, pleasantly removed from the heat and smoke, lift off a pan, flop a cake, or stir the food, and return the dish to the stove. The stove, by the way, was made of band iron, $\frac{1}{2}$ inch thick by one inch wide, as shown in the



following cut, and was riveted so as to permit movement and the bringing together of the two side-pieces. The ends rest on flat stones, about six inches above the ground; and by a little adjustment, it can easily be made level. It holds three cooking utensils at once, is very convenient, costs about \$1.00, and weighs five pounds.

MISCELLANEOUS SUPPLIES.—Plenty of strong cord, some baling wire, a spool of fine copper wire, a pair of combined nippers and pincers, a coarse file, a punch and a package

of assorted rivets, a handful of various-sized nails and screws, some leather straps and thongs, two or three snaps, extra boot-laces, two or three iron rings, a paper of hob-nails, a paper of tacks—both plain and double-pointed. All these were put in one canvas bag, with a draw-string top; and its contents, while weighing only five and a half pounds, successfully met all emergencies and made many repairs. The cost of this assortment was about \$2.75. An ax, well ground, should be taken along; and a light hatchet in addition is often found useful. A pick and short-handled shovel are not necessary, but sometimes convenient. At least one canteen, holding two quarts, should be taken; and it should always be kept full. The inexperienced frequently suffer from thirst as a result of being over-confident of finding water along the way. A compass should be carried; and an aneroid barometer, if one cares to know the extent of his ups and downs on the trip. We fished, and so each took a rod, lines, assorted flies and leaders; and we improvised creels out of sections of gunny-sack. Hunters, of course, will want to take everything necessary in their line.

In addition to the few articles necessary for strictly personal use, we took three dish-cloths, three kitchen towels, toilet and Ivory soap, and a toilet case for common use, containing scissors, tooth-powder, mirror, pins, safety-pins, assorted needles, strong thread—black and white,—and one-half dozen extra buttons. We also considered necessary a note-book, pencils, playing cards, Sierra Club map, and two or three books; and the following medicines: Arnica, court-plaster, medicine for colds, iodine in ammonia for snake bites, Squibb's mixture for stomach troubles, a reliable poison-oak remedy, and a box of vaseline.

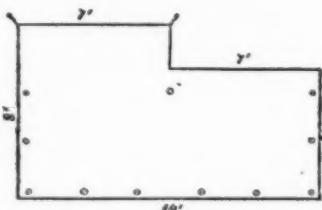
CLOTHING.—Each person should take one suit of extra underclothing, two extra outside shirts, strong and preferably of dark color, plenty of socks and handkerchiefs, a

pair of heavy gauntlet gloves, either a heavy coat or a sweater, and overalls to wear in the mountains, or else an extra pair of pantaloons to go home in. These can best be carried in a canvas bag, wrapped in the bed when traveling. Gloves, shirts, and pantaloons should be heavy and strong, for they will be tried severely. A soft felt hat with rather broad brim is the proper thing. Never start with boots or shoes that are not a perfectly comfortable fit. A person who has trodden many weary miles upon blisters larger than a quarter-dollar, made by poorly fitting shoes, will not overlook this precaution again. With proper hunting boots one can ford streams not deeper than the height of the boot without getting the feet wet, and in going down gravelly slides grit cannot enter to torment, while the heavy leather is almost proof against rattlesnakes. Those who find boots too tiresome wear heavy shoes and leggings; but, for the reasons above given, I would sooner use boots, and, if necessary, take a light pair of shoes for camp. Which-ever kind is used, should be as strong as possible, with thick soles, and hobnailed.

BEDDING.—Two of us used one sleeping-bag, made by laying down a double blanket (not cut apart), opened. Upon one-half of it two sheets of canton flannel were laid, with the soft sides together, then two quilts upon that, and upon this was turned back the other half of the blanket. The edges of these various articles were then strongly sewed together across the bottom, all the way up one side, and two-thirds of the way up the other. The covers being fastened together, one can't pull or toss them off during sleep, or gradually work out the bottom when upon a slope; and the edges being held tightly together by the sewing, the cold wind cannot penetrate. The advantages of a double bed over two single ones are that you have the warmth of the other body, there is greater liberty of movement, and the clothing is not drawn down upon you as much as in a nar-

rower bag. One side of this bed is thicker than the other, and that side is placed uppermost which best corresponds with the temperature of the atmosphere. If this amount of bedding is not sufficiently soft, a feather-bed effect can be produced by placing under it a sufficient quantity of small pine or fir boughs. Camping-cots are no softer, while they are cumbersome to carry, and, the body being suspended, the cold air circulates underneath, and makes it hard to keep warm. Mr. T. S. Solomons informs the writer he finds most convenient a quilt made of eider-down, doubled over and fastened across one end and up the open side, and this placed in a canvas bag. Complete for one, this weighs six pounds. He claims there is much less weight and bulk for the same amount of warmth than where cotton is employed; and, if the bedding has to be purchased anyhow, perhaps the expense is not much greater.

In addition to the bed above described, we had a piece of canvas, made as shown in the accompanying cut, and used as follows: The bed is laid upon the left-hand half, with its head toward the flap above. When desired, the other half is drawn over the bed. Otherwise, it affords a clean place on which to deposit one's clothing, or to dress. When the weather is very cold, or there is much wind, or a storm of rain or snow, the open side of the bed can be laid to the middle of the canvas, so that this last, when folded over, closes the opening; the cloth can be fastened together by the eyelets at the bottom and sides; one can then crawl in, pull the flap down over his head, secure it there by hooking the snaps at its corners into the rings, and there he is, as warm and



protected as one possibly can be in wild weather. During the day the bed is folded up in the canvas, which protects it when traveling. Such a bed for two weighs about 18 pounds, and the cloth 8 pounds more.

Having now considered what to take, the next subject requiring attention is:

HOW TO TAKE IT.

ANIMALS.—If the journey is to be upon good roads or well-made trails, with the country not too rugged, mountain-bred horses are desirable. If the way is uncertain, over rough country, and the opportunities for feed unknown, they should be left at home. Under no circumstances should horses not thoroughly used to mountain travel be taken. As between the small breed of mountain-trained mules and burros, there is not so much choice, but the odds are in favor of the small mule. He can carry more and walk faster than a burro, but his feet may not stand the same amount of hard usage; nor is he usually as docile. If one indulges in the luxury of an assistant to attend to the animals, or if one is not used to considerable physical exertion, it may be desirable to take saddle-animals. But if one must have the care of them himself, or intends to explore unknown regions, they should be dispensed with. The average mountaineer considers them a useless incumbrance. As to the number of animals necessary, it has been our experience that good and continued service cannot be had from burros, traveling in rough mountainous country, when loaded with much more than 100 pounds each, although they are occasionally started on a trip with as much as 150 pounds. Everything mentioned in this article, including boxes to pack in, will weigh less than 350 pounds. We had three good burros, traveled almost constantly, and brought them back in first-class condition.

SADDLES, BRIDLES, AND PACK-ROPE.—Never start until the pack-saddles are in good condition. They should have both front and back cinches, breast-straps and breeching; and will cost, new, with a pack-cinch, about \$5.00. With such a saddle, a properly packed outfit will need very little attention, even on the roughest trails; while with a poor one, frequent trouble is almost certain. An extra gunny-sack, folded, can be used to replace a broken cinch, if necessary. Saddle-blankets should be large and soft, and may be made of carpet and gunny-sacks, if regular ones are not at hand. No bridles are necessary for pack-mules or burros; nor is even a halter essential. A lead-rope, tied around the neck, will usually answer; while a half-hitch of the rope around his nose will bring a stubborn one to time. The first few nights out the animals should be staked. After they get away from their usual haunts, if food is scattering, it might be advisable to turn them loose. In such case, a bell attached to the one found to be the leader, will frequently save much time in searching for them among the brush. Our pack-ropes were of $\frac{5}{8}$ -inch cotton rope, each about 35 feet long, with a snap on one end, and cost about 50 cents apiece. The length was ample, either for packing or staking the animals out at night. Cotton rope is softer and more pliable than manilla; but if you tie a pack with it when wet, upon drying it stretches so as to necessitate re-adjustment. Moreover, it probably wears out more quickly, and cannot be relied upon to survive more than a month of continuous service. In addition to a pack-rope for each animal, an abundance of smaller rope should be taken for lead-ropes, and various purposes. Be sure that one end of the pack-cinch has a ring, and the other a large hook. Snap the rope into the ring, and then it need only be looped over the hook at the other end, instead of being drawn through a ring.

SADDLE-BAGS.—They should be box-shaped, 18 inches

long by 16 inches deep and 8 inches wide, made of heavy canvas, strongly sewed. There should be two loops of rope about a foot long, securely fastened to one upper edge of each, on the side next the saddle, and about five inches from the ends; and a ring about $1\frac{1}{2}$ inches in diameter should be strongly attached to the middle of the opposite, or outer, edge. One of each pair of these "cuyacks" should have three feet of small rope permanently tied to its ring. Saddle-bags of this size are ample for use upon a burro or small mule, and cost about \$3.50 a pair. They cannot be made too strong to withstand the rough usage to which they will be subjected.

BOXES.—If boxes are used for packing, a convenient size is twenty inches long, nine inches wide, and fourteen inches deep. The ends and the side that comes next the animal should be at least three-quarters of an inch thick, and the rest may be of one-half-inch stuff; all of light but tough wood, dressed and put together with screws. The edges and lower corners should be rounded; and they would be still more serviceable if the edges were bound with strips of thin sheet iron, like trunks. The lid should be on top, hinged, and made of one-half-inch stuff with outside cleats to strengthen it. Loops of rope should be fastened on the thicker side by means of holes bored near the top, and a ring should be fastened on the other side by a strap riveted on. Such boxes will probably cost fifty cents to one dollar apiece, and weigh fifteen pounds.

SADDLE-BAGS VERSUS BOXES.—While many packers turn up their noses at the use of boxes for packing, others are as enthusiastically in favor of them. Boxes are heavier, it is true, and their size does not decrease as their contents lessen,—which are disadvantages. The objection that they chafe the animal does not hold good if the boxes are not too large, if the corners are rounded, and if a sufficient saddle-blanket is used. A little more skill may be required

to adjust boxes properly upon an animal; but when it is accomplished, the pack is there to stay. When the rope is tightened around saddle-bags, the pressure upon their contents is great, and the breakables are in danger. This pressure upon only certain points under the rope, causes a readjustment of the contents of the bag as we jolt along the road; consequently the rope is slackened, and the pack is more liable to slip. With boxes, when the rope is once tightened, it necessarily remains at the same tension; and the pack, if properly balanced, must ride as safely at the end of the day as at the outset. Articles can be disposed of in boxes, and taken from them with greater neatness and convenience than in saddle-bags; while during a rain-storm, whether on the road or in camp, your provisions are thoroughly protected. If you are fording a stream, and the animal accidentally or of necessity gets deep enough in the water to dip the pack for a moment or two, not enough water will enter the box to damage its contents, while a canvas pack soon becomes water-logged. The box, closed on all sides, keeps its contents cleaner than the open-topped bag. When in camp, provisions in saddle-bags are not safe from the inquisitive and ever-hungry burro or other animals, while in boxes they are. A box on its side serves as a seat, and another, upright, constitutes a solid and level table. The under-side of the lid forms an excellent bread-board. A wire passed through two gimlet-holes near the top of the rear end of one of the boxes enables the hatchet to be securely fastened, where it is ready for instant use, and not in the way nor necessary to be detached when unpacking. The way the boxes rest on the animal always throws the outer edges higher than the inside, and the stove, fishing-rod, and other articles which are similarly fastened to the tops of the boxes are therefore well protected, not only by the higher portions of the boxes themselves, but, in addition, by the horns of the saddle; while, if bedding is to

be placed above them, they are equally well protected from breakage through pressure, by reason of the flat and solid box on which they rest. One can toss the sack of cooking utensils and the canteen between the horns of the saddle which does not carry the bedding, and by reason of the slope of the boxes they will ride safely without being tied. When saddle-bags are used, after they and the bedding are adjusted and roped up, inclination, and even necessity, leads one to tie the various loose articles separately to different portions of the pack, and each has to be separately removed before the pack can be taken off. With boxes, if the pack should slip, all that is necessary is to throw aside the canteen and sack, loosen the pack-rope, and lift off the two boxes with their appurtenances still attached—only four articles to remove, and but two of them fastened,—thus saving considerable time, trouble and sometimes danger. We believe the advantages here enumerated far more than offset the objections to boxes for packing; and, using both methods at the same time, we have become strong advocates of the use of boxes.

DISPOSAL OF PROVISIONS.—Canned goods are always ready to be packed, while potatoes, etc., need but a gunny-sack. With things ordinarily received in paper from the grocer the case is different. Last year we made sacks for such articles out of closely woven muslin, with draw-strings; and a Dennison tag attached to each conveniently designated its contents. Of those who pack in boxes and make frequent trips, a few of the more fastidious have square tins made to fit the boxes, of proper size and suitably labeled, with large screw-tops, in which such articles are kept absolutely safe from the weather, rough usage, dust, and purloining animals.

PACKING.

All our knives, forks, teaspoons, cups, saucers, bowls, can-opener, and the two cans of left-over food were con-

tained in the smaller bucket. That was placed in the large one, and six pie-plates laid on top. Then the lid of the large bucket was put on, string or baling wire run through the ring of the lid and the other rings near the bottom of the bucket and tied; and we had, in one package, all the dishes and some of the food needed for lunch. These things weighed, with the cans empty, twelve pounds. The cooking utensils were thrown in a sack, and the opening tied. These weighed seven pounds. As one's outfit receives a great many handlings upon a trip, it is desirable to have as few packages as possible. Consequently, arrange to have everything go in "cuyacks," or boxes that can be put there. The two for each animal should be of as nearly the same weight as possible. Five pounds difference, with constant jolting hour after hour, will frequently cause a pack to turn. Where the weight cannot be so adjusted, by swinging the heavier box a little higher on the animal than the other, the equilibrium can be maintained.

If there are several animals, saddle them all first, and do not give the cinches their final tightening until just before putting on the pack. This means a less length of discomfort for some of the animals, and consequently a greater capacity for work. Separate the cinches pretty well, so that the swell of the belly will be between and hold them apart, and tie them with a piece of string at that distance, so they will not spread farther and chafe the animal's legs. Tighten the rear girth last, and uncinch it first, or you may have trouble, especially with a mule. The breeching and breast-straps should be no looser than is necessary to prevent rubbing from the movement of the animal. When the final cinching is being done, one's conscience is always eased by remembering that animals invariably distend their abdomens considerably beyond normal size during that operation, and the severe tightening necessary does not, in fact, give the amount of pressure at first apparent, and that a

hundred-pound pack causes the saddle to settle more closely to the animal, and decreases the strain in that way.

Having nicely balanced each pair of bags or boxes, suspend them upon the animal by hooking their loops over the two horns of the saddle which are on the opposite side. The length of the loops can be adjusted so as to obtain a properly-balanced pack, either by tying a knot in the loop, wrapping it twice around the horn, or twisting it a number of times before placing it over the horn, as may be necessary. The pack should not be too high, because the higher it is built above the animal the more top-heavy it will become, and the greater the liability to slip over. On the other hand, it should never extend below the animal's abdomen. After the loads are properly placed, run the loose end of the rope which is tied to the ring of one of the "cuyacks," or boxes, through the ring of the one upon the other side, and draw the rope tight, so that, while the bags are not pulled out, a considerable portion of their weight is sustained by this rope, and prevented from pressing against the animal's sides; and then fasten the rope by a loop, rather than by a hard knot. Bedding should be protected by canvas from dust and the limbs of trees, and, when folded, its length should be across the animal. When "cuyacks" are used, it is advisable to have a large piece of heavy cloth, preferably waterproof, to throw over the pack just before putting on the cinch-rope, to protect its contents from dust and rain. When cinching, watch that the bedding or the pack itself does n't get pulled lopsided.

If you cannot make a diamond hitch, take along Mr. Le Conte's lucid description of it, contained in the SIERRA CLUB BULLETIN, Vol. I, No. 8, and with its aid you can learn in a few minutes. If you use it upon one trip, you will never try another. Using boxes and the diamond hitch, when we stopped at noon we could unpack and unsaddle the animals in ten minutes, let them feed and rest

for three-quarters of an hour, pack up in twenty minutes or half an hour, and be off again. This stop at noon was not only good treatment of ourselves, but kindness to the burros, and wisdom as well. After a heavy pack has been thumping up and down upon an animal's back for three or four hours, with a tight cinch cramping his "in'ards," an hour's relief is not only considerate, but enables him to put in the balance of the day to much better effect than if the burden and travel were continuous.

A good many of the things mentioned in this article may be considered unnecessary by the hardy mountaineer, especially as regards the variety of food. But these suggestions are not made for his benefit. Many people, when preparing for their first outing, imagine they can enjoy, for several weeks, subsistence upon only two or three coarse varieties of food; and forget that there is considerable difference between sleeping upon yielding springs and hair mattresses in a warm room, and stretching their aching limbs upon hard ground, unprotected from the elements; and thereby spoil what might otherwise have been a delightful outing. There are hardships enough, and unpleasant features enough, in the best-planned mountain trip, without making such radical changes in one's manner of living. One cannot enjoy either grand scenery or a good temper with a disgruntled stomach or a chilled body. Mountain trips should be for pleasure and recuperation, not for discipline and stoicism; and, until one learns for himself what can be dispensed with, he should take plenty. In this article we have endeavored to present an acceptable medium between burdensome superfluity and dissatisfying paucity. To the lover of nature a mountain trip affords limitless opportunities for instruction and delight; and let us hope that the reader's next one will be so arranged that its greatest possibilities shall be realized.

TO TEHIPITE VALLEY FROM THE KING'S RIVER GRAND CAÑON.

BY J. M. STILLMAN.

During the past summer a party of Sierra Club members, Professors Chas. N. Little, Geo. M. Richardson, Thos. D. Wood, and the writer, being established in camp in the Grand Cañon of the King's River, made an excursion to Tehipite Valley on the Middle Fork, under the guidance of that pioneer resident of the King's River country, Mr. John Fox.

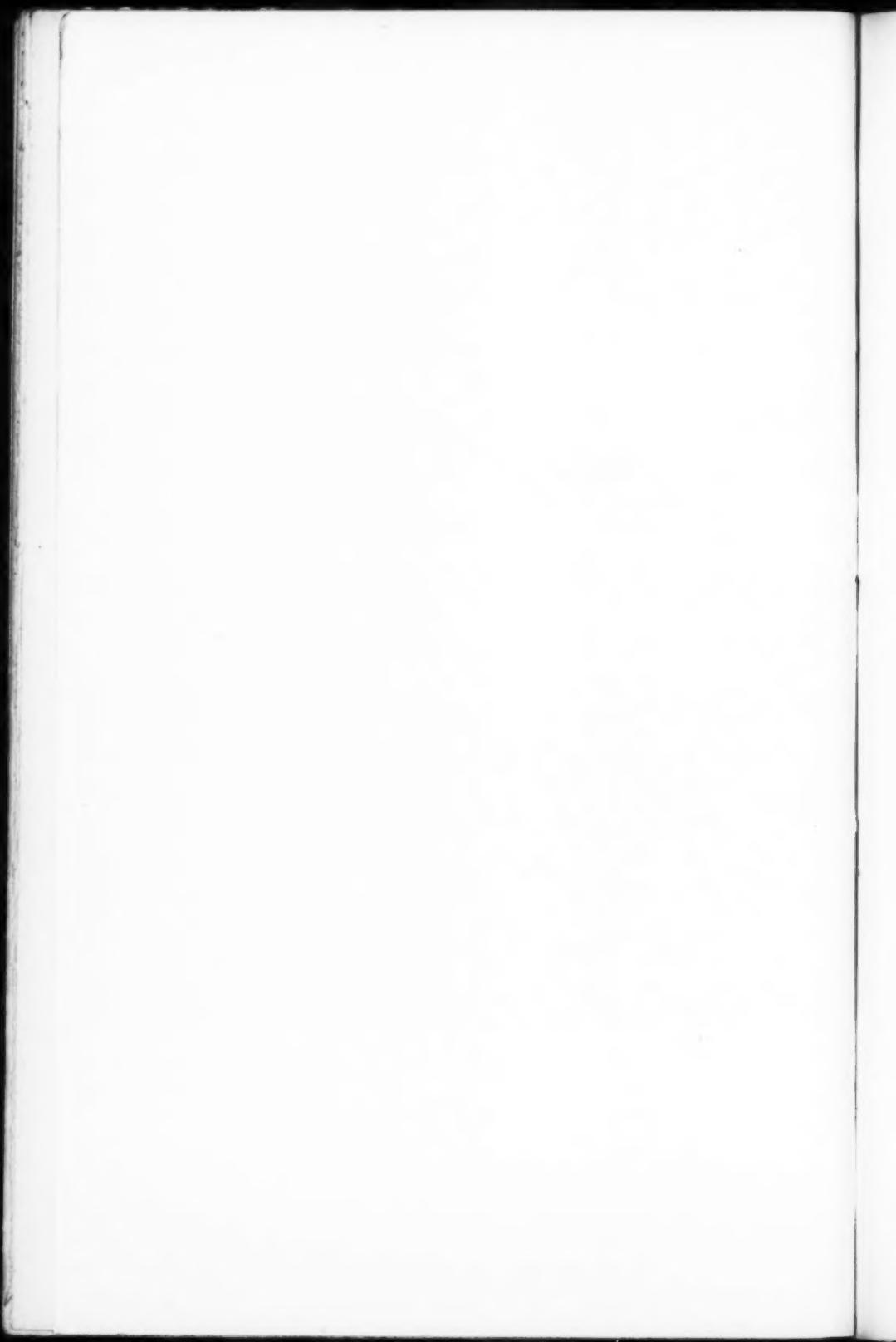
As the route we followed under his guidance is not the usual route, and is considerably shorter, a brief description will perhaps not be without interest to members of the Club.

The usual route leads up Copper Creek, through Granite Basin, and is usually estimated at from three to four days each way. The trip by Fox's route can be accomplished easily in two days. We left Fox's bridge across the South Fork at about 4 p.m. on July 29th, following down the north bank of the river for about a mile and a half on a well-beaten trail to the cañon of Grizzly Creek. The trail then turns to the right before reaching the creek, and rises sharply up the east bank of the cañon. About two miles from this turn, we crossed Sheep Creek, a branch of Grizzly, and about half a mile or so farther on we camped, staking our burros in the rather sparse grass on the divide between this branch and the main creek, making our own camp somewhat farther down the slope toward Grizzly Creek. It is not a very good camping-spot, as water is to be obtained only by a steep climb, and feed is poor. The next morning we took the trail again, crossing Grizzly Creek



TEHIPITE DOME.

From a photograph by Walter A. Starr.

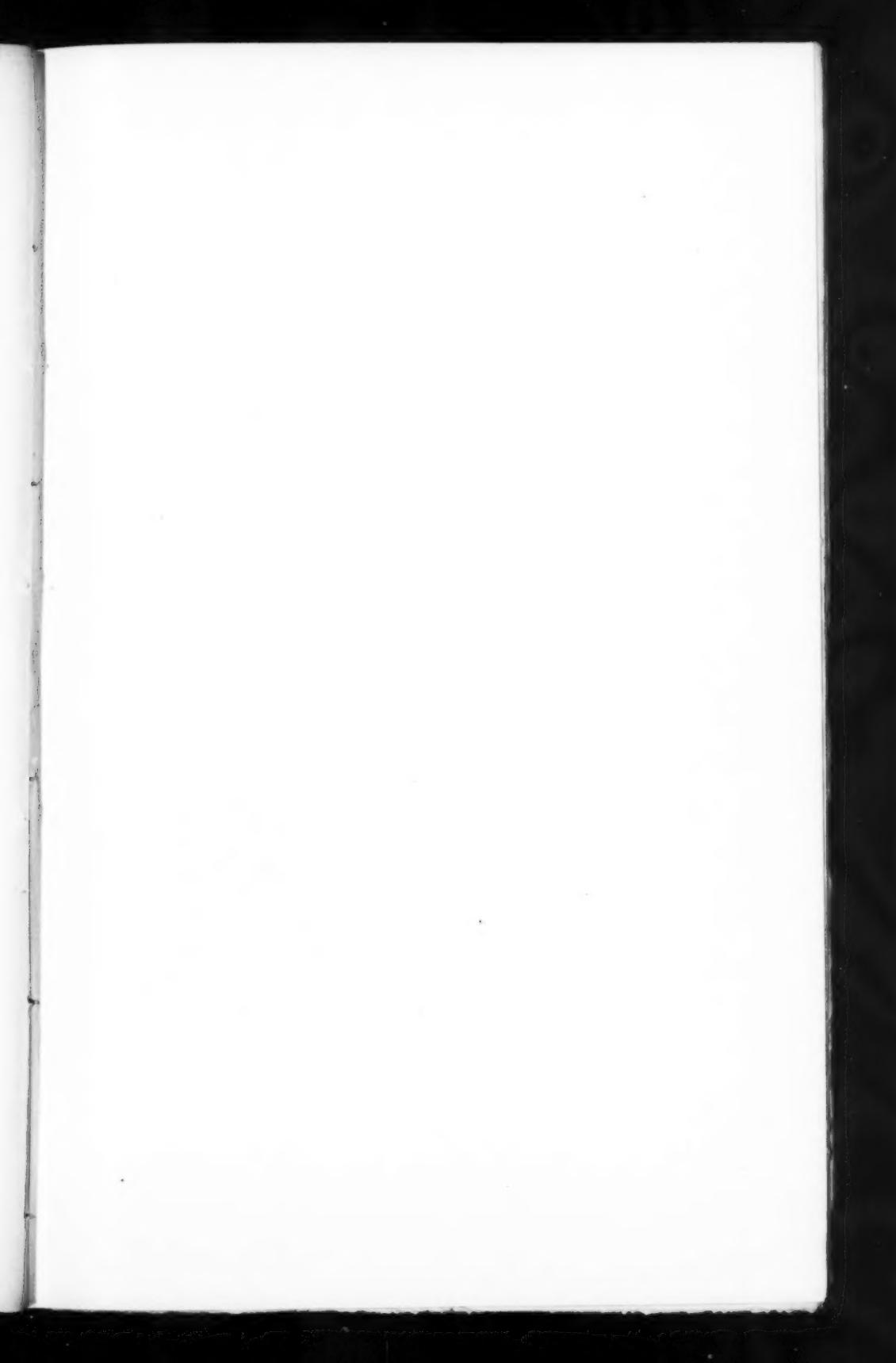


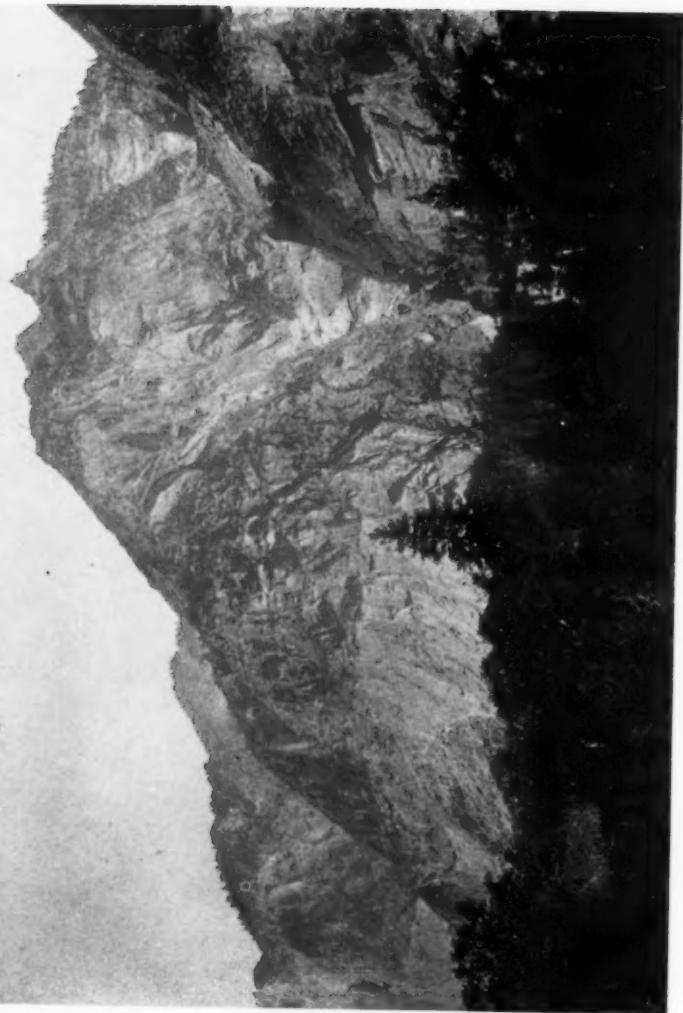
about half a mile or more from our camp. About two miles farther the trail passes Wildman Meadow (a good camping-spot), turning sharply to the right, though there is a trail which forks from the main trail and passes to the left down through the meadow. Shortly after passing Wildman Meadow, a small creek (Grouse Creek) is crossed, and the trail then climbs a ridge, crossing it just below a lofty and striking granite dome, which Mr. Fox calls Mt. Harrington. The summit of the ridge on the trail is about eight thousand feet in elevation, and Mt. Harrington cannot be much under nine thousand feet high. After crossing this spur ridge we descend, traversing a broad valley, well covered with manzanita and deer-brush. The trail passes well down the valley, to avoid brush and rough rocks bad for animals. A small stream flows through this valley, the last water before the main divide is crossed. After clearing the brush, the trail rises on the shoulder of the ridge beyond, and maintains its elevation fairly well on the face of the slope until it reaches the lightly timbered saddle of the main divide, called by our guide "Happy Gap." The elevation of the monument on the trail at this summit is not far from 9300 feet. The pass commands superb views of South and Middle Fork regions.

From this point the trail runs quite directly about forty-five degrees west of north (true meridian), or about sixty degrees west of north by the needle. Sheep graze through this region, and the trail scatters and ramifies more or less in the region through which the trail first passes on descending from the pass. The route, however, lies a few hundred yards to the right of a stream which heads a little west of Happy Gap, and finally crosses, by a rough bit of trail, a lively stream (Silver Creek) just above its junction with the westerly branch. From this point on, the trail was obscure, there being no signs of recent travel. An occasional stone monument, and the old ax-marks on

trees and brush were the only evidences in many places of a trail. The trail was cleared some three years ago, by Mr. Fox and others; but sheep were taken over it one year, and did serious damage to it. After crossing Silver Creek, the trail rises sharply on the eastern bank, and keeps down the creek, but quite a distance above its bed, until an opening is reached, where are the half-burned remains of a rather elaborate camp. This is Big Oak Flat. It is not very flat, except in comparison with the country round about, which is generally "on edge." The elevation of Big Oak Flat is not far from 6000 feet. Here we made camp for the night, climbing down the steep bank of Silver Creek a hundred feet or more for water. Here, also, the next morning we left burros, blankets, and everything else we could spare, and started on foot to complete the trip, as the trail seemed unsafe for the pack-animals.

The trail from this point was at times difficult to find, being innocent of hoof- or foot-prints, and most easily traced by the old ax-marks on the brush. In direction it is quite straight, keeping several hundred feet above Silver Creek on the flank of the cañon, until the monument which marks the summit of the wall of the cañon of the Middle Fork is reached, about two hours from our camp at Big Oak Flat. The monument is about 1600 feet above the margin of the river. At this point we abandoned the old trail-marks, as Mr. Fox believed that the old trail had been too much obliterated to be of service in its present condition, and sought a route down the crest of the steep ridge, at the head of which stands the monument above mentioned. The descent to the river is steep, and, in its present state, difficult, and impracticable for saddle- or pack-animals. The rock which forms the cañon walls at this point is red, splits and splinters easily, and its insecurity is one of the chief difficulties of this part of the trail; but on the ridges it is usually covered with brush or undergrowth, so





EL COMMANDANTE.
From a photograph by Walter A. Sturt,

that travel is not dangerous. Much time was consumed in prospecting for a route, but we finally found our way down, having occupied two hours and forty-five minutes in making the descent. Our trail struck the river, perhaps a mile and a half below the widening of the Tehipite Valley. A trail, little used, but clearly to be traced, runs up the river until sheared off by a smooth cliff of red rock, which forces animals to ford through the edge of the water, though foot-travelers can find a route over the point above the cliff into the Tehipite Valley proper.

Tehipite Valley needs no description here. Its most striking feature is beyond question the beautiful Tehipite Dome, described by Muir in the *Century Magazine* of 1891, and certainly rivaling in grandeur and symmetry any of the Yosemite cliffs, though not so high as some of those. The Tehipite Falls, by which Crown Creek plunges in two principal leaps into the valley west of the dome, enhance the beauty of that wall of the cañon. On the opposite side of the cañon from Tehipite Dome, is a high shoulder, surmounted by a pyramid-shaped mass, which we thought fully equal in picturesque beauty to any feature of the South Fork Cañon, as seen from the valley below.

On the same (south) wall of the valley, and below the pyramid just mentioned, is another very striking feature of the walls. This is of the red rock characteristic of so much of the Tehipite walls; and, resulting from the way in which this rock splits and weathers, the crest of this cliff is sculptured into no very strained likeness to some of the spreading ruins of ancient fortresses which crown so many of the eminences in Europe.*

Tehipite Valley is much smaller than the Yosemite or the King's River Grand Cañon, only two or three miles in

* Since this article was written I hear that the pyramid-crowned mass was named "El Comandante" by Winchell. This is on the authority of Mr. Solomons.

length and probably not much over half a mile wide, in so far as its level floor is concerned. It is wilder in aspect than the Grand Cañon. Its meadows were covered in large part with brakes, thimble-berry bushes, and other growth waist-high. Its elevation is considerably below that of the Grand Cañon. The barometer gave 3900 feet elevation where our trail struck the river below Tehipite, while 4500 feet was the observation at Fox's Cabin, in the lower end of the Grand Cañon. The floor of Tehipite is not much higher than where we struck the river — perhaps averaging about 4000 feet. The California bay and the poison-oak, of which we found a little in Tehipite, we had not seen in the Grand Cañon.

The Middle Fork is nearly as large a stream as the South Fork; and our fishermen found the fishing fully as good as in the South Fork. Trout formed our staple diet during our stay. Having no blankets and a short stock of provisions, we spent but two nights in the valley, sleeping, however, very comfortably by the camp-fire, as the nights were quiet and not cold. On the morning of August 2d, we returned, retracing our route to our Big Oak Flat camp, whither Mr. Fox had preceded us the day previous, to care for the burros.

Our actual traveling-time on the return trip will perhaps be of service to such as may take the trip:

	HRS. MINS.
From bank of Middle Fork to the monument on summit of wall	1 35
Thence to camp at Big Oak Flat	2 15
Thence to Happy Gap (summit of divide)	2 25
Thence to Burns' Sheep Corral (our camp for the night)	1 20
Thence to Fox's Bridge (South Fork)	<u>3 05</u>
Total actual traveling-time	10 40

The general direction of the route between the terminal points above given is about forty-five degrees west of the

true meridian, or about sixty degrees west of north by the compass. Happy Gap is almost directly on the line between Fox's Bridge and the point where we struck the Middle Fork. We estimated the actual distance on the trail at not far from twenty-five miles, if thirty miles represents the distance from Sequoia Mills to Fox's Cabin. Comparatively little labor would convert this route into a passable pack-trail; but unless the sheep were kept off, there would be comparatively little inducement for any one to construct a trail. It is a pleasure to the Sierra traveler to find a region where the vegetation shows no traces of recent devastation by sheep. The luxuriant growth in Tehipite is a pleasant change from the close-nibbled and hoof-beaten meadows of the country in and around the South Fork Cañon. The route described presents an excursion which will be full of interest to the lover of beautiful scenery.



The accompanying sketch of the route is based upon Mr. Le Conte's Sierra Club map, and is modified only as seems necessary to give a correct notion of the route, though no claim to accuracy is here made. The distance by trail and the angle of the South Fork and Middle Fork in this region is surely not correctly presented in the county map, which served as the basis of that part of the Sierra Club map, if I am correctly informed. I think the sketch here given is a nearer approximation to the facts.

AN EARLY SUMMER EXCURSION TO THE TUOLUMNE CAÑON AND TO MT. LYELL.

BY THEODORE S. SOLOMONS.

Accompanied by Miss Stella Sweet, Miss Bertha Sweet (U. C. '96), Miss Mabel Sweet (U. C. '99), Miss Mabel Davis, and Mr. Adolph Sweet (U. C. '98), I left Yosemite Valley on the 13th of June, by the Yosemite Falls Trail. A week before, snow covered the lower slopes above the walls of the Valley, but the snowfall in all but the highest parts of the range having been of recent occurrence (about May 1st), it had melted rapidly; and we did not encounter it as a continuous sheet until we began the ascent of the long hill leading to Snow Flat.

We reached Lake Tenaya on June 14th. The lake itself was still entirely frozen, but about its northward shores, for some miles back, there were patches of bare ground aggregating about half the total surface; and short "dry" feed was already well up, in sunny spots. On the 16th, the summit of the glaciated headland opposite Tenaya Cliff, was climbed. The highest point was found to be about a mile from the lake, and to command a spacious view. On the 17th, the party ascended the creek that enters the lake from the North, following the old Virginia Creek trail (the initial portions of which, at least, we found rebazed with the new and characteristic T mark of the cavalry) until it crossed to the west side and ascended the western branch. Pursuing the eastern, and apparently larger, tributary, we came to a number of lakes and pools discharging their waters in both directions. To the north the water flowed into Cathedral Creek, by which we hoped to reach the

IN THE UPPER TUOLUMNE CAÑON — LOOKING TOWARD THE NORTH WALL.
From a photograph by Theodore S. Solomons.



IN THE UPPER TUOLUMNE CAÑON — LOOKING TOWARD THE NORTH WALL.

From a photograph by Theodore S. Solomons.



A MAKESHIFT CAMP, NEAR LAKE TENAVA.
From a photograph by Theodore S. Solomons.

Tuolumne River; but soft snow preventing this, we returned to Tenaya. On the 19th, we continued along the Tioga Road, now nearly free of snow, to within two miles of the Tuolumne Meadows, when we turned abruptly northwest, passing over the low divide, and camped at noon on the southern bank of the Tuolumne, about midway between the Meadows and the Virginia Trail crossing. The following morning we started with knapsacks down the river. There was carried among us about ninety pounds weight, made up, besides camera and plates, of no more than the severely simple outfit of food, utensils, and sundry necessities, carried by previous parties of Club members through the cañon.

I found the southern side easier traveling than the northern; and the views of the walls and cascades are also much finer from this side. We made the Le Conte Cascade at 11 A.M. of the 21st, and Return Creek early next morning. From this point I made, alone, a short excursion down the river and found the cañon side very rough, steep, and brushy; but I remember that the northern side, also, was found to be of the same character. Hence, I am in doubt as to their comparative advantages, below Return Creek. It must be borne in mind however, that the southern side of the Muir Gorge is a more or less continuously steep wall of great height; but, except in the highest water, it is easy to ford the river at many places between the two points mentioned; or, indeed, log crossings may usually be found.

The water-line showed a subsidence of about four feet from the highest water-mark of the season; but the cascades, nevertheless, were conspicuously finer than when I saw them in August, 1894. I shall make and place in the Club-rooms a diagram of the upper portion of the cañon as far as Return Creek, showing the best route of descent.

On our return, we reached camp early in the afternoon of the 23d. On the 24th, we arrived at the head of the

meadow at the base of Mr. Lyell, made the ascent the following day over a great deal of low-lying snow, and returned to Yosemite by the Cathedral Peak trail, reaching the Valley on the 28th. On Summit, Cathedral, and Long Meadows, the snow was still deep, although on the Tuolumne Meadows and on the high slopes on either side, especially to the north, there was not a vestige of it.

I think our experiment proved the ability of the average young woman, in good health, to endure without great hardship many of the most difficult feats of mountaineering in the High Sierra. Our trip was a good test in several ways. We walked the entire distance; much snow, swollen streams, and wet boggy meadows made it impossible to keep our feet dry in the daytime, and often also at night; yet none of the ladies ever suffered from so much as a cold. In the Tuolumne Cañon, than which there is scarcely rougher traveling to be found anywhere in California, I found them considerably slower than athletic young men, but fully as able otherwise to cope with all the physical difficulties; and their capacity of endurance of cold water, loss of sleep, snow, and certain forms of muscular fatigue, somewhat greater, perhaps, than that of the average young mountaineer of the other sex.

NOTES AND CORRESPONDENCE.

In addition to longer articles suitable for the body of the magazine, the editor would be glad to receive brief memoranda of all noteworthy trips or explorations, together with brief comment and suggestion on any topics of general interest to the Club.

ON THE NAMING OF MOUNTAINS.

As the Sierra becomes better known, the problem of finding suitable designations for its peaks grows in urgency and in difficulty. Our heritage of Indian names seems never to have been very large—at least within the High Sierra; and the greater part of what might have been saved from that source, has now been irrecoverably lost under the spendthrift régime of sheep-herder and prospector. On the other hand, the nomenclature which these later nomads have invented is generally so void of euphony and dignity—is often so unutterably vulgar,—that one can hardly regret its scantiness. Here, then, is an opportunity for valuable and lasting service to society—or for lasting harm. By common consent, the explorer or climber has the right of suggestion or nomination; but since there is no counter nomination nor acknowledged authority to alter or amend, his nomination, of itself, is practically final. We “stand within his danger,” then, indeed; all that the court can do directly, is to entreat him to “be merciful.”

Indirectly, however, something may be done by a general comparison of views as to the considerations which should govern in the naming of these noble landmarks. As a good opening to such a discussion, we present the following suggestions, made by Prof. Bolton Coit Brown, in a communication which, we regret to say, our limited space does not permit us to print entire:

The letter opens with a vigorous onslaught on the current fashion of naming mountains in honor of men, even though these be “men eminent in the physical sciences.” Men and their reputations inevitably fade out of remembrance. Since the name alone can abide, it should be chosen on grounds of inherent fitness, not because it may serve for a passing compliment. The writer frankly acknowledges his own transgressions in this regard, but professes repentance and reformation. In reply to the suggestion that the naming be left to those “in authority,” he says:—

“Who indeed can rightly be said to have authority over the Sierra Nevada? Politically, they are the property of the seventy

million people of the United States; but in a wider and truer sense they belong to the human race, and will rear their untroubled summits when the memory of the United States is kept alive in archaic records and museum specimens. Their use to humanity is not that of a collection of memorial monuments minus the epitaphs. Their highest, most permanent, most important use is not to feed sheep, not to raise timber, not to mine gold, not to furnish money-making shows for hotel-keepers, not to afford trout-fishing and bear-hunting, not even for quarrying granite or storing water supplies. For all of these things they may be used; for some of them, and to some extent, they may be well used; but it remains true that these are not the highest uses of the mountains. These uses serve but material ends, and for the gratification of the inherited, but now useless and detrimental, passion for chasing and killing.

"It is not easy, probably it is not possible, exactly to define what the highest uses are. But in general we may say that they are the uses which men put them to when they go to them for the love of them, for the exaltation of spirit and the exhilaration of body which comes from them. Underneath what is called the 'sport' of mountaineering—and a true and noble sport it is,—there is something more than mere sport in the ordinary use of the word. This something is not in the sport of horse-racing, of whist-playing, or of prize-fighting; it is not in any sport except those which touch the nobler sides of human nature. Mountaineering has two sides, the athletic and the aesthetic. The athletic side is not at all affected by names; the muscular exercise is just the same, no matter what the name is. But the other side—the poetic—is affected by names; is affected by whatever is or is not poetic, is or is not harmonious, beautiful, fitting; and this, either to the ear or to the mind.

"Much of the charm of the mountains depends upon the absolute harmony of all that is there. There is no intrusive foreign thing in them; there is no inappropriate thing; there is no vulgar thing. They do not insolently thrust in your face silly placards about Hobson's Rat Poison or Johnson's Pills; they do not disfigure themselves with lying real-estate signs; the names of no political candidates insult the trees; there are no yelping curs, blatant voices, or jangling street-cars; there is no odor of underground horrors or discomfort of dirty crowds. In the mountains all is large, quiet, pure, strong, dignified; there all is beautiful; each thing is a perfectly appropriate part of that unity which we call nature. . . . All is wholesome to the body, interesting to the mind, and agreeable to the senses. And the state of mind they tend to put us in may be called poetic.

"To name some of the parts of this complete unity which we

call nature is a practical necessity; and the fundamental reason for trying to name them well is, that we do not wish the names to jar and to be out of harmony with the rest. We do not want to feel the only thing man adds to the mountain—the name—as a discord. It is a distinct unpleasantness to be obliged to know a sublime and beautiful mountain gorge as being *Bubb's*, for instance. The same is true, in degree, of any name that suggests a *person*.

"Why should we not have—what is our excuse for not having—names that are appropriate in sound and sense? A good name will harmonize; it will, in euphonious syllables, either appropriately describe (as does *Half Dome* or *Cloud's Rest*), or to be to us a meaningless, euphonious, appropriate sound (like *Tahoma*, *Shasta*, *Kearsarge*), which may designate that group of impressions which we call the mountain. And it will not force on all comers any particular piece of suggestion or sentiment, especially none of a personal sort, which the namer may have happened to think of. Each person ought to have a fair chance to have these things mean what they will to him, and should not, as a rule, be afflicted with *Twin Sisters*, *Devil's Slides*, or *Bridal Veils*. All such pseudo-romantic appellations smack of childishness and of cheap sentimentalism.

"Sometimes it will happen that a personal name is phonetically good, and yet not wishy-washy. In *Ritter*, for example, we seem to hear the clink of rattling stones. *Campbell*, *Stanford*, *University Peak*, *Gardiner*, *Whitney*, and *Williamson*, however, are bad, as also are *King's Cañon*, *Bubb's Creek*, and *Cartridge Creek*. *King*, *Brewer*, *Barnard*, are poor; *Woodworth*, *Ericsson*, *Jordan*, and *Tyndall*, are middling; *Blue Cañon*, *Tioga Road*, *Tehipite Valley*, *Yosemite*, *Roaring River*, are good. *North Dome*, *South Cañon*, *East Lake*, are inoffensive, but absolutely colorless and flat. *Bullfrog Lake* is not bad; *Lake Eleanor* is very beautiful. Of descriptive names, I should call *Cathedral Spires* middling; *Saw-Tooth Mountains* and *Arrow Peak*, good. *Tuolumne Meadows*, in the common pot-bellied corruption of it—*Tuh-woll'ummy*—is absurd; but when given rightly, as I have heard an Indian speak it,—*Tu-ah-lum'nee*, in distinct syllables,—there is hardly a more beautiful name in the mountains. *Sierra Nevada* falls most musically upon the ear; and, taken with its meaning, is, perhaps, the best name of all. No, not all—*Shasta* is the best of all.

"The desirable thing, then, in naming is not "authority," nor is it to drag in some man by the hair to "honor" him; but a consideration of the significance and suggestiveness of words to the mind, and of their musical suggestiveness to the ear. This, in the long run, will satisfy us best; and it will, in a much longer run, satisfy best our friends of the future."

A TRAMP IN THE EMERALD BAY REGION.

To the Editor of the Sierra Club Bulletin.

DEAR SIR:—Having recently enjoyed most delightful outing in the mountains to the west of Lake Tahoe, it has occurred to me that a few notes of the trip might be of interest to the members of the Sierra Club. Our party, consisting of R. R. Dempster, my brother (J. S. Hutchinson, Jr.), and myself, left the lake at Emerald Bay, carrying our blankets and several days' provisions. We camped the first night high up on the slope of the ridge which rises to the northwest of the bay. We were in good position to examine a large part of the cañon of the stream which runs down to Emerald Bay; and I would recommend the following route as being easier than the one followed by your party last year. From the bay westward for three-quarters of a mile, or a mile, it is certainly easier going on the south side of the stream; but just below where the cañon makes a rather abrupt turn to the south, it is better to cross to the north side, and follow a depression running off a little north of west to the base of the smooth, striped cliff which forms the northern wall of the cañon, and then bows around and brings you out on the northern shore of Eagle Lake. Above Eagle Lake, keep along near the stream until you come to a cascade and a rocky barrier, which, at first sight, seems impassable, save by a wide detour to the north. You will notice, however, a few hundred yards to the right (north) of the cascade, a brush-covered shelf on the face of the rock barrier, and by a short, hard scramble through this brush, and along the shelf, you can reach the top in safety. From this point to Glacier Lake there is no difficulty.

Leaving Glacier Lake to the right, we climbed high up over the northwestern shoulder of the ridge which forms the eastern side of Rockbound Valley, passing *en route* a little snow-choked lake which does not appear on the U. S. Geological Survey map. Our camp that night was high up on the eastern side of Rockbound Valley, overlooking the whole cañon of the Rubicon.

Next day we followed up the cañon of the Rubicon, keeping well up on the eastern slope, and around the base of Dick's Peak, or Crystal Peak, as it is called in Glen Alpine. Early in the afternoon we crossed the pass at the head-waters of the Rubicon, and plunged suddenly down into Desolation Valley (Devil's Basin on the U. S. Geological Survey map). Then, crossing the slope to the south of Heather Lake, we made our way without difficulty down to Susie Lake (spelled *Suzy* on the map), near which we went into camp.

Our last day's trip was one which is probably very familiar to many members of the Club:—from Susie Lake across to Gilmore

Lake, thence to the top of Mt. Tallac, and finally down one of the great rocky chutes on its eastern face to Tallac. The whole trip was a charming one, full of hard work, but replete with fascinating surprises.

It may be worth while to note what is evidently a misprint in the map of the U. S. Geological Survey. The altitude of Eagle Lake is given as 8,540 feet. It should undoubtedly be 7,540.

Respectfully yours,

LINCOLN HUTCHINSON.

SAN FRANCISCO, September 27, 1896.

PRIVILEGES OF MEMBERS OF THE SIERRA CLUB.

To the Editor of the Sierra Club Bulletin.

DEAR SIR:—On my recent trip to King's River Cañon I found that an erroneous notion as to the object of Sierra Club organization is held by some of the men we encountered — that it aims to establish game preserves for its members, to the exclusion of the public from hunting and fishing privileges. On my way to Millwood I had to combat that opinion expressed by the stage driver, and again in the valley, by the guides; also, by a resident there who has a claim upon some meadows and charges for pasture of animals. These men profess to believe that the Club has been actuated by selfish motives in inducing Uncle Sam to look after the sheep-men and protect the sequoia groves by a patrol of soldiers. They claim that members of the Club and a favored few get of the military officers permits to carry arms and camping privileges.

Respectfully yours,

J. S. HUTCHINSON.

SAN FRANCISCO, August 20, 1896.

OUR SISTER SOCIETIES.

It is a royal *menu* that is presented the lover of nature in Sierra Club exchanges accumulated since our last issue. In fancy he may ramble under the safe guidance of their many contributors over the rugged hills of Scotland, through the pleasant and picturesque Carpathian mountains of Hungary, or attempt the most arduous ascents among the ragged peaks of Norway, the Swiss Alps, the Canadian Selkirks, the snowy summits of Oregon, or the Alpine ranges of far New Zealand. It is an interesting brotherhood, this mountain-seeking fraternity, and though they clothe their speech in various outward forms, they all speak the same heart-language.

Our northern neighbors, the Mazamas of Oregon, make their

first appearance in a journalistic way in Volume I, No. 1, of *MAZAMA: A Record of Mountaineering in the Pacific Northwest*. It is perhaps the stateliest periodical among our exchanges, handsome in dress, type, and paper, generously illustrated with fine views of scenery about Mts. Hood and Adams, and with an attractive array of contributors. The title "Mazama" will suggest the purposes of the organization, being a synonym for the mountain goat.

APPALACHIA for November will be found of unusual interest to our members. It contains some well-written accounts of the Appalachian Club excursion to the Selkirks, illustrated with excellent views. Professor Fay gives a graphic account of the excursion in which our fellow-member, Mr. P. S. Abbot, lost his life, and there is a portrait of Mr. Abbot, and a biographical sketch of his life, from the pen of Prof. Palmer. Our Mr. T. S. Solomons has, in the same number, an interesting illustrated account of the Grand Cañon of the Tuolumne.

The last number of the journal of the SCOTTISH MOUNTAINEERING CLUB, well exemplifies that for the true mountain-lover, much pleasure and healthful exercise may be obtained without seeking the loftiest or most inaccessible mountains, and he need not dispense with the elements of excitement and danger when scrambling amongst the rugged Scottish mountains.

From the Scotch Highlands to the mountains of New Zealand is a "far cry," but the NEW ZEALAND ALPINE CLUB JOURNAL will carry us quickly there, and we shall find ourselves in a grand and inviting region. Its many peaks, of 8,000 to 10,000 feet high, and its Mt. Cook, about 13,000 feet high, evidently will afford ample resource for the members of the New Zealand Alpine Club, and its journal is doing much to attract interest to the exploration of the "New Zealand Alps."

The bulky annual number (Aabog) of the Norwegian TURISTENFORENING (Kristiania) will not be found generally easy reading for Sierra Club readers, with the exception of two or three articles in English, but the volume contains some enticing pictures of snow-clad and rugged mountain scenery well worth laboring to visit.

The sixteenth Jahrgang des SIEBENBÜRGISCHEN KARPATHEN-VEREINS presents some interesting accounts of mountain excursions, as also some interesting glimpses of life and customs in that mountain frontier between Hungary and Roumania.

The new Club Alpino Siciliano has begun the issue of a quarterly journal, SICULA, at Palermo. New bulletins are at hand from the Societa Alpina Meridionale (Naples), the Club Alpine Belge (Brussels), and the Club Alpine Suisse.

From our cousins, the Geographical Societies, there are several

publications containing many articles of interest and value. Space will not permit of extended reference, but they may be seen on the shelves at our club-room. The NATIONAL GEOGRAPHIC MAGAZINE for October contains an article on California by Senator Perkins; BULLETIN No. 3, 1896, of the American Geographical Society contains an interesting article by T. C. Russell on Mountaineering in Alaska; and Vol. I, No. 5, of the BULLETIN of the Geographical Club of Philadelphia consists of an illustrated account of the Peary Auxiliary Expedition of 1894, by Henry G. Bryant.

The Club is also in receipt of late publications of the VEREIN FÜR ERDKUNDE ZU LEIPZIG; and, last but not least, of geological and topographic maps of the Kamloops District on the line of the Canadian Pacific, from the Geological Survey of Canada.

J. M. STILLMAN.

VIEWS OF THE CANADIAN ROCKIES.

For the striking views of the Canadian Rockies which illustrate the first article of this number, and for the fine portrait of Philip S. Abbot which accompanies the second, we are indebted to the courtesy of Professor Charles E. Fay, editor of APPALACHIA, who has generously permitted the use of plates belonging to the Appalachian Mountain Club. The circumstances of their printing prevented the making of this acknowledgment with the illustrations themselves.

KIT CARSON'S TREE.

Dr. Henry Senger informs us that the famous tree which stood at the summit of Carson Pass, above Hope Valley, was cut down, not by the United States surveyors, as previously reported in the BULLETIN, but by a Mr. Thornburgh, of Markleeville; and that the section with the inscription commemorating Kit Carson's passage is now preserved in the rooms of the Mining Bureau, Pioneer Building, San Francisco, where it may be seen by visitors.



